The Era of Social Computing

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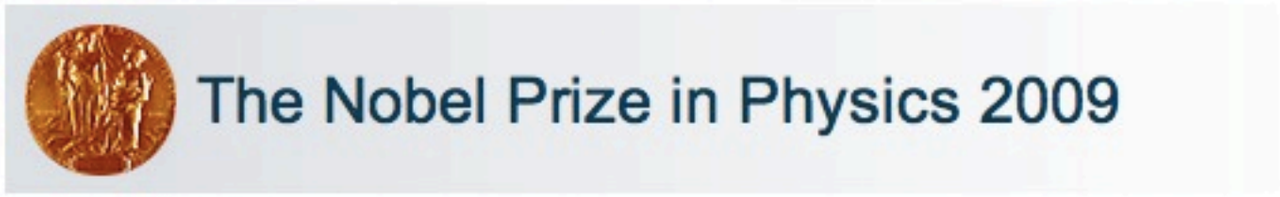
Sand from Centuries Past Send Future Voices Fast



The Nobel Prize in Physics 2009

"for groundbreaking achievements concerning the transmission of light in fibers for optical communication"

"for the invention of an imaging semiconductor circuit – the CCD sensor"

Photo: Richard Epworth

Charles K. Kao

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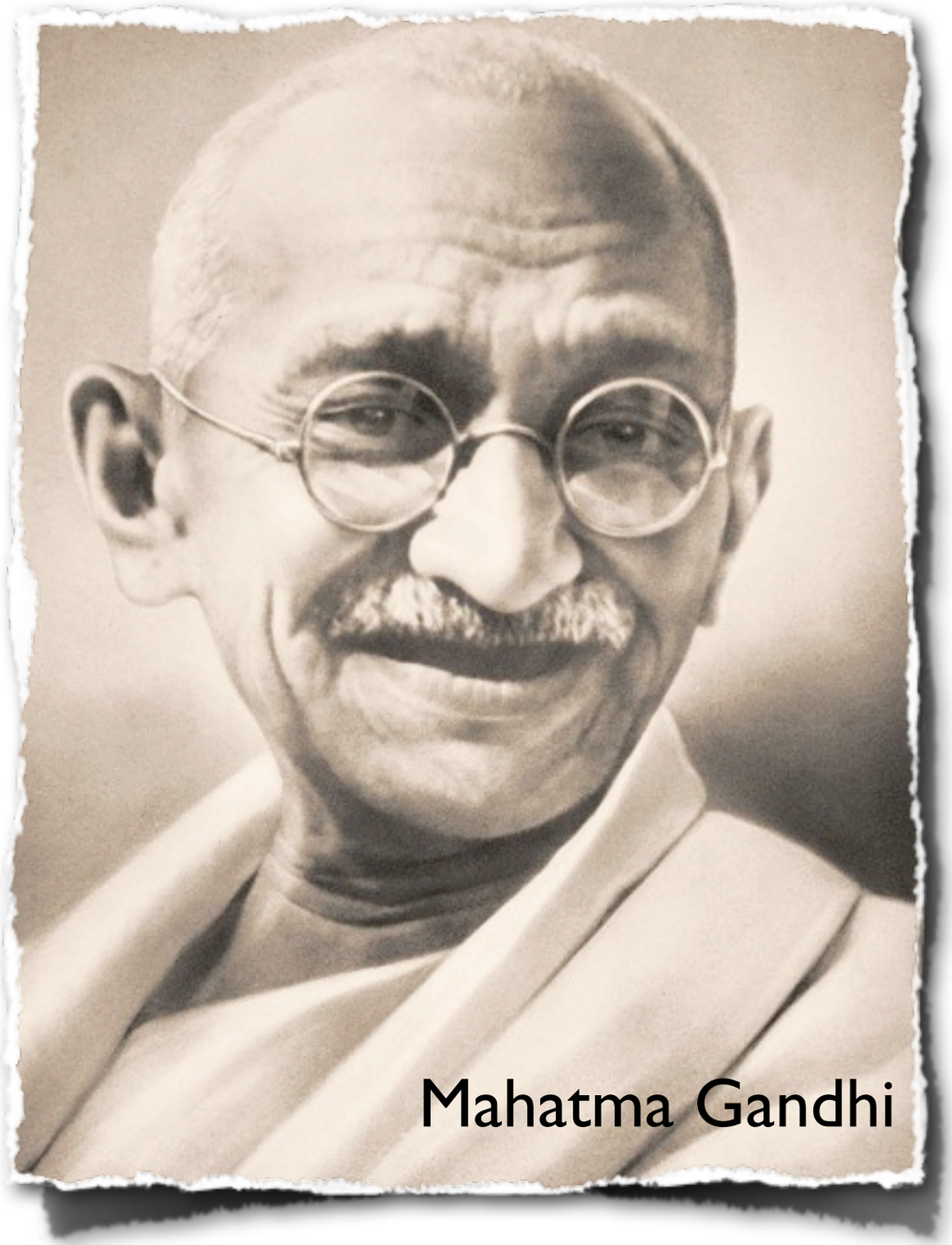
George E. Smith

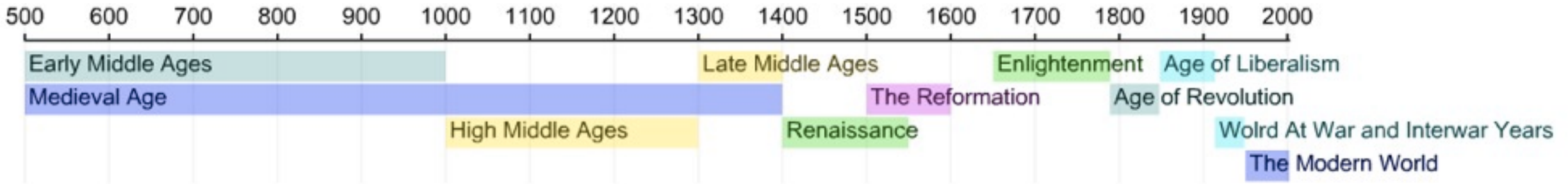


Mahatma Gandhi

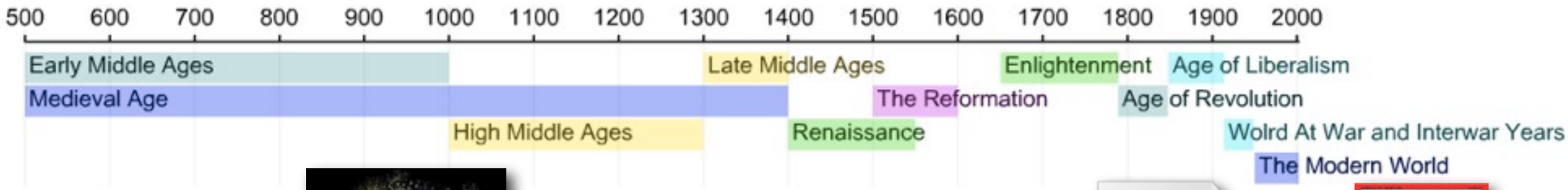
Interdependence is and ought to be as much the ideal of man as self-sufficiency.

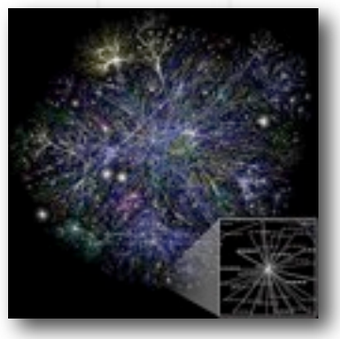
Man is a social being.

A Brief History of the World



A Brief History of the World

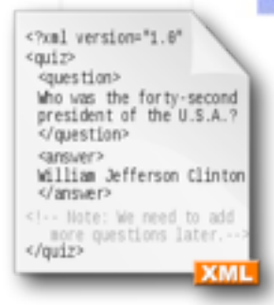




Birth of Internet

IBM Desktop PC

Apple Macintosh



Birth of XML

Time Magazine
Person of the Year

1750 1945 1969 1975 1981 1983 1984 1989 1996 2004 2006

Industrial Revolution | **Information Age** | **Internet Age** | **www Age** | **Attention Age**

ENIAC

The MITS Altair
Apple II

Time Magazine
Person of the Year

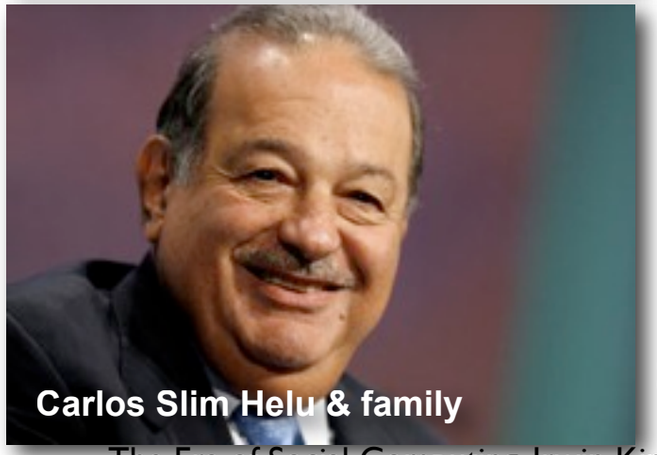
Birth of WWW

Birth of Web 2.0

Computational Approaches in Social Computing, Irwin King, ICONIP2009, December 3, 2009, Bangkok, Thailand

Billionaires' Shuffle

2007



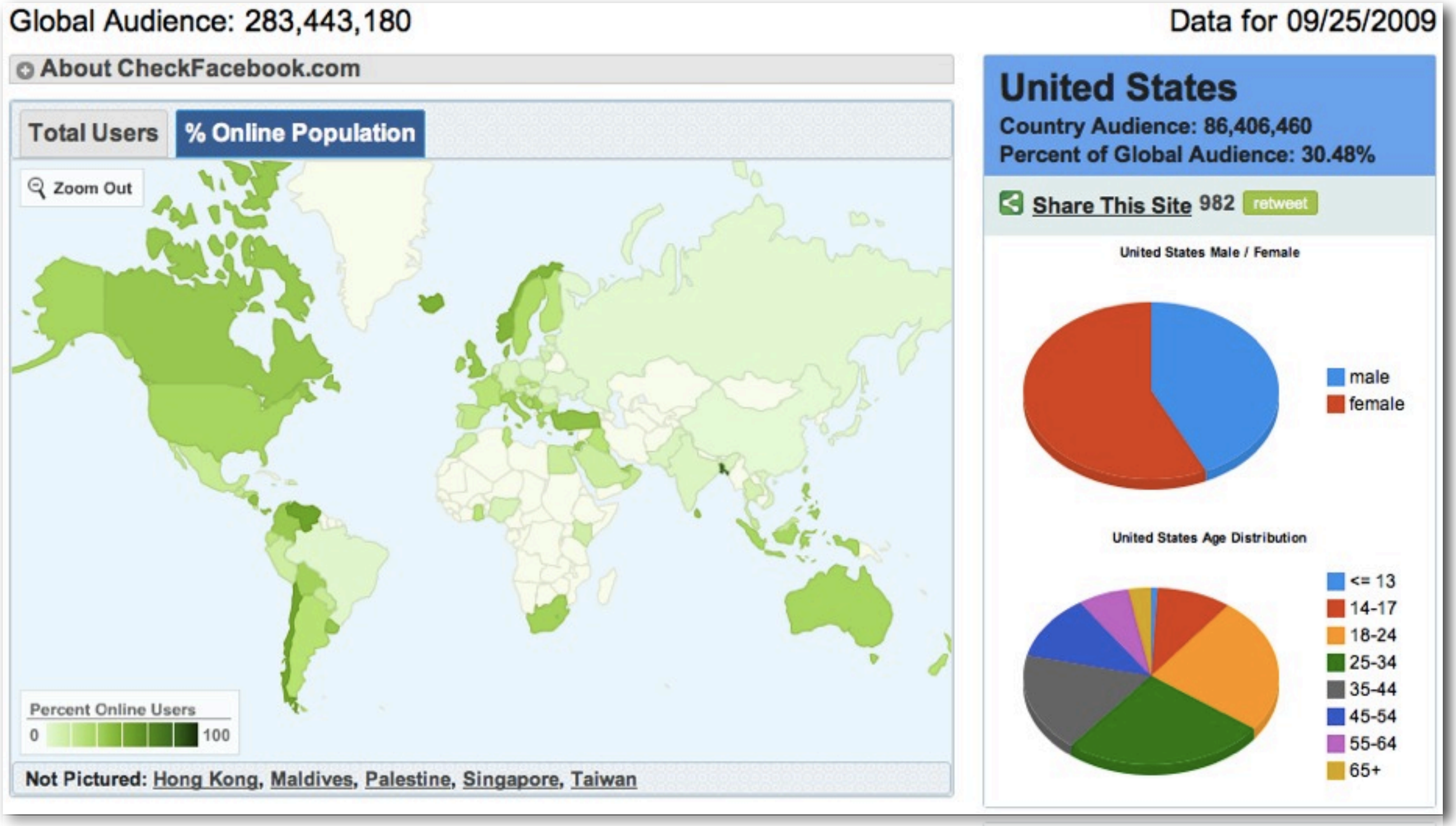
Facebook in 2004.02

2008

at **23** and $**1.5** billion later...

2008

Facebook's Global Audience



Facebook's Growth Table

General Growth

More than 300 million active users
50% of our active users log on to Facebook in any given day
The fastest growing demographic is those 35 years old and older

10 Largest Countries		
1.	United States	86,406,460
2.	United Kingdom	20,214,180
3.	Turkey	13,104,960
4.	Canada	12,862,140
5.	France	12,245,140
6.	Italy	11,573,640
7.	Indonesia	9,642,620
8.	Australia	6,572,900
9.	Spain	6,554,500
10.	Argentina	6,380,080

10 Fastest Growing Over Past Week			
1.	China	100.58 %	6,920
2.	Taiwan	11.14 %	322,900
3.	Vietnam	8.91 %	74,460
4.	Philippines	6.77 %	360,360
5.	Iraq	6.05 %	4,800
6.	Romania	5.17 %	15,300
7.	Sweden	5.11 %	127,760
8.	Ireland	5.1 %	47,220
9.	Ukraine	4.81 %	7,780
10.	Qatar	4.49 %	8,500

Global Internet Traffic

Alexa as of May 2009	China	USA	Japan	India	Brazil	Global
1	Baidu	Google	Yahoo.jp	Google.in	Google	Google
2	QQ	Yahoo	FC2	Google	Orkut.br	Yahoo
3	Sina	Facebook	Google.jp	Yahoo	Windows Live	YouTube
4	Google.cn	YouTube	YouTube	Orkut.in	Universo Online	Facebook
5	Taobao	Myspace	Rakuten	YouTube	YouTube	Windows Live
6	163	MSN	Livedoor	Blogger	Globo	MSN
7	Google	Windows Live	Ameblo.jp	Rediff	MSN	Wikipedia
8	Sohu	Wikipedia	mixi	Facebook	Google	Blogger
9	Youku	Craigslist	Wikipedia	Wikipedia	Yahoo	Baidu
10	Yahoo	EBay	Google	Windows Live	Terra	Myspace

Twitter in Spotlight

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The New York Times
Friday, June 19, 2009

News

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The Lede

The New York Times News Blog

June 2, 2009, 7:05 PM

China's Great Firewall Blocks Twitter

By ROBERT MACKEY

Catherine Henriette/Agence France-Presse — Getty Images

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Previous Post: **Bloggers Ponder Last Message From Missing Jet's Computer**

Next Post: **Punditry From Bin Laden and Zawahiri on Obama's Trip to the Middle East**

Recent Posts

June 18 (38 comments)
Latest Updates on Iran's Disputed Election
To supplement reporting from New York Times correspondents inside Iran on Thursday, The Lede will continue to track the aftermath of Iran's disputed presidential election online.

June 17 (129 comments)
Wednesday: Latest Updates on Iran's Disputed Election
On Wednesday, The Lede will continue to track the aftermath of Iran's disputed presidential election online, to supplement reporting from New York Times correspondents inside Iran.

June 16 (198 comments)
Tuesday: Latest Updates on Iran's Disputed Election
To supplement reporting from New York Times correspondents inside Iran, The Lede

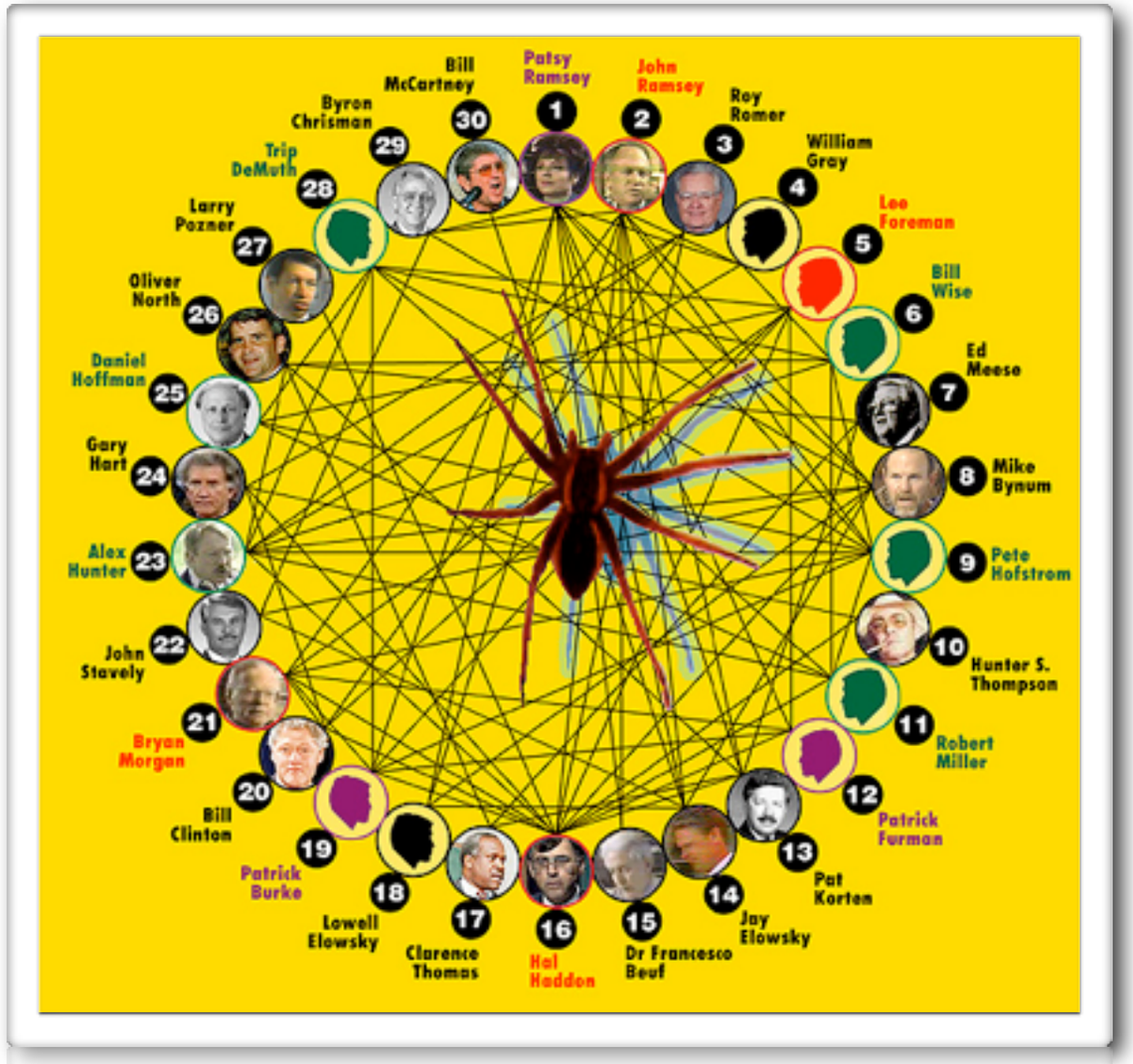
Web 2.0

- Web as a medium vs. **Web as a platform**
- Read-Only Web vs. **Read-and-Write Web**
- Static vs. **Dynamic**
- Restrictive vs. **Freedom & Empowerment**
- Technology-centric vs. **User-centric**
- Limited vs. **Rich User Experience**
- Individualistic vs. **Group/Collective Behavior**
- Consumer vs. **Producer**
- Transactional vs. **Relational**
- Top-down vs. **Bottom-up**
- People-to-Machine vs. **People-to-People**
- Search & browse vs. **Publish & Subscribe**
- Closed application vs. **Service-oriented Services**
- Functionality vs. **Utility**
- Data vs. **Value**

The Era of Social Computing, Irwin King, The Future Generation Information Technology (FGIT2009), December 11, 2009, Jeju Island, Korea

Social Networks

Society:
Nodes: individuals
Links: social relationship
(family/work/friendship/etc.)

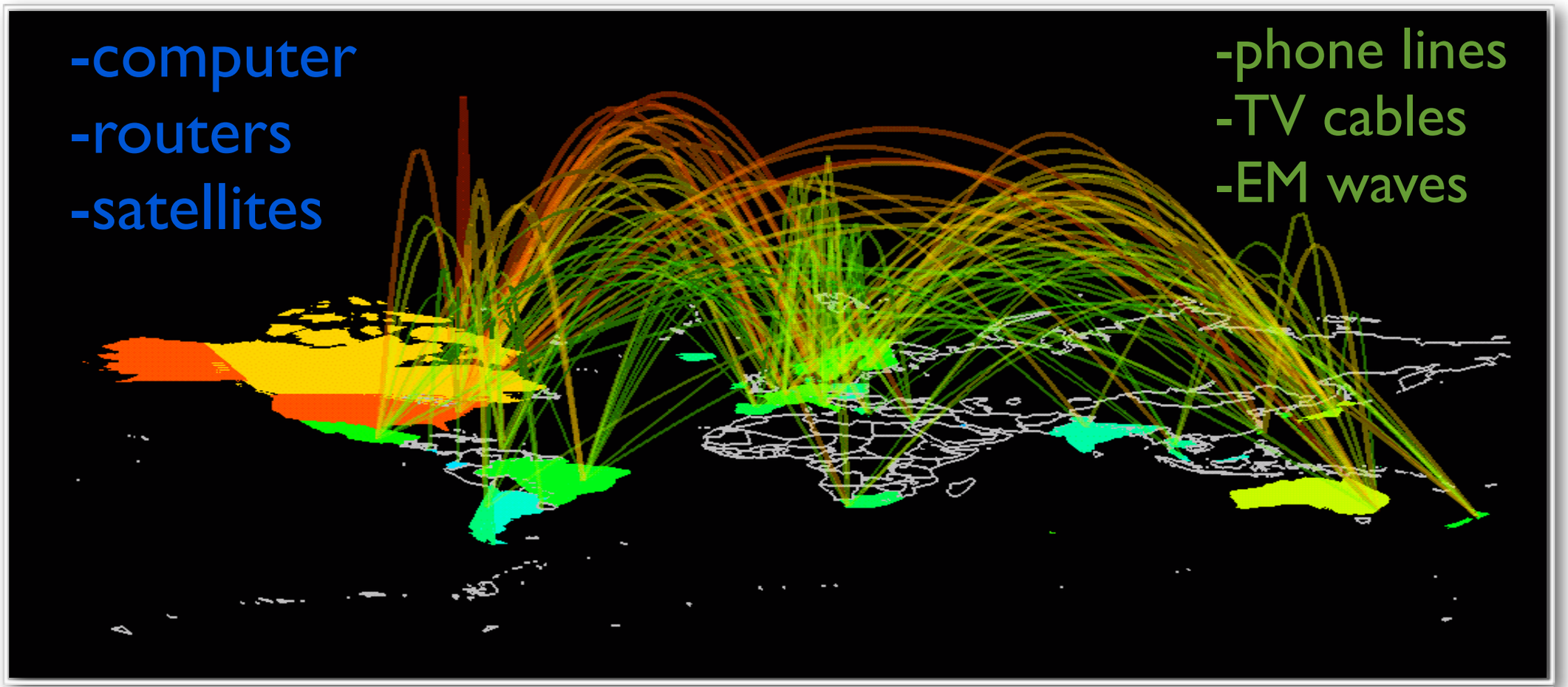


S. Milgram and John Guare: Six Degree of Separation.
Social networks: Many individuals with diverse social interactions between them.

Milgram's Experiment

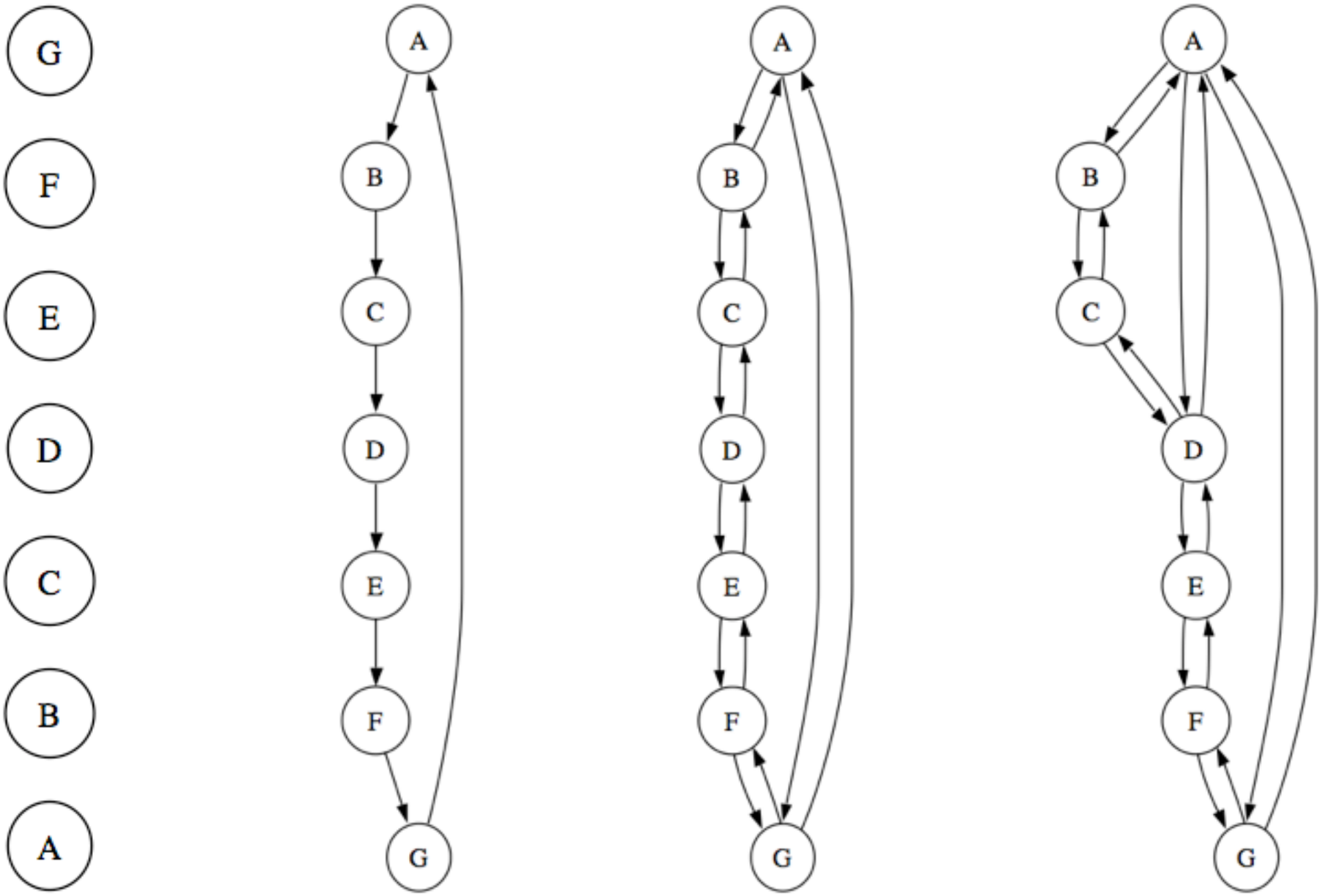
Social Networks

- The Earth is developing an electronic nervous system, a network with diverse nodes and links.

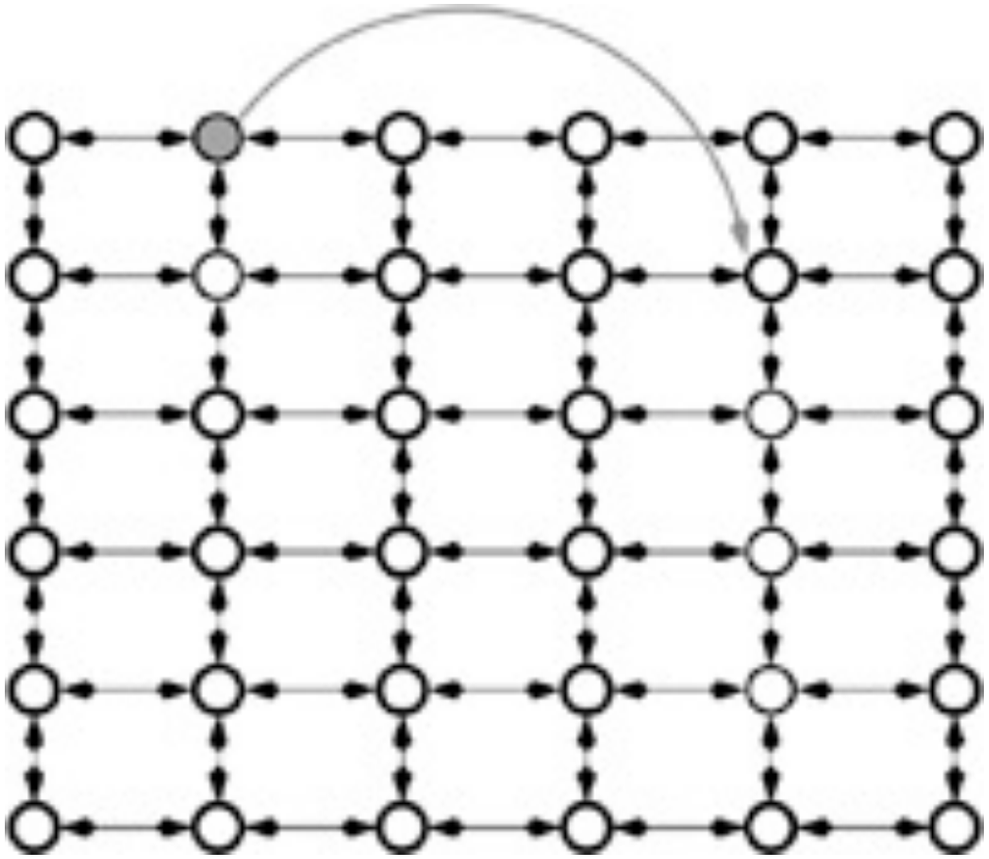


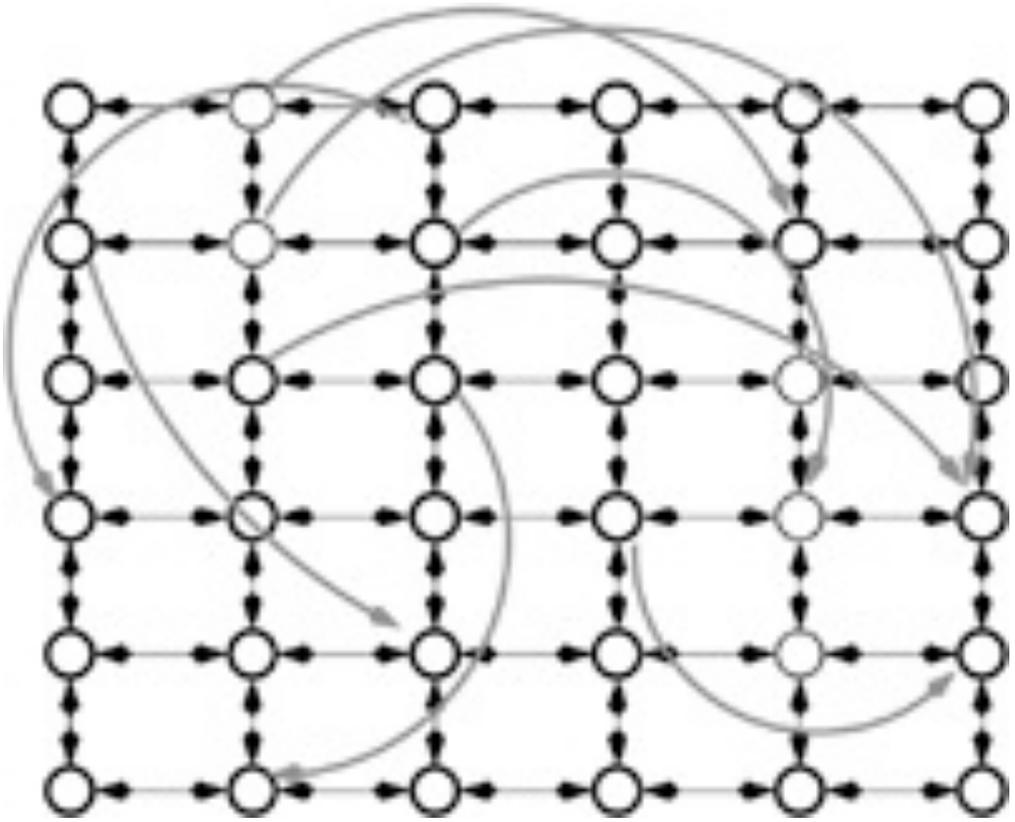
Communication networks: many non-identical components with diverse connections between them.

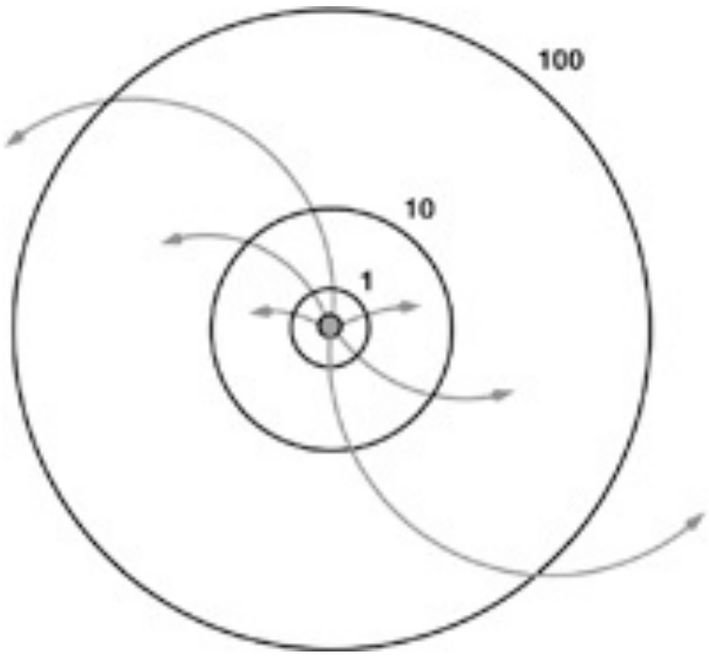
The Flow of Information



Examples

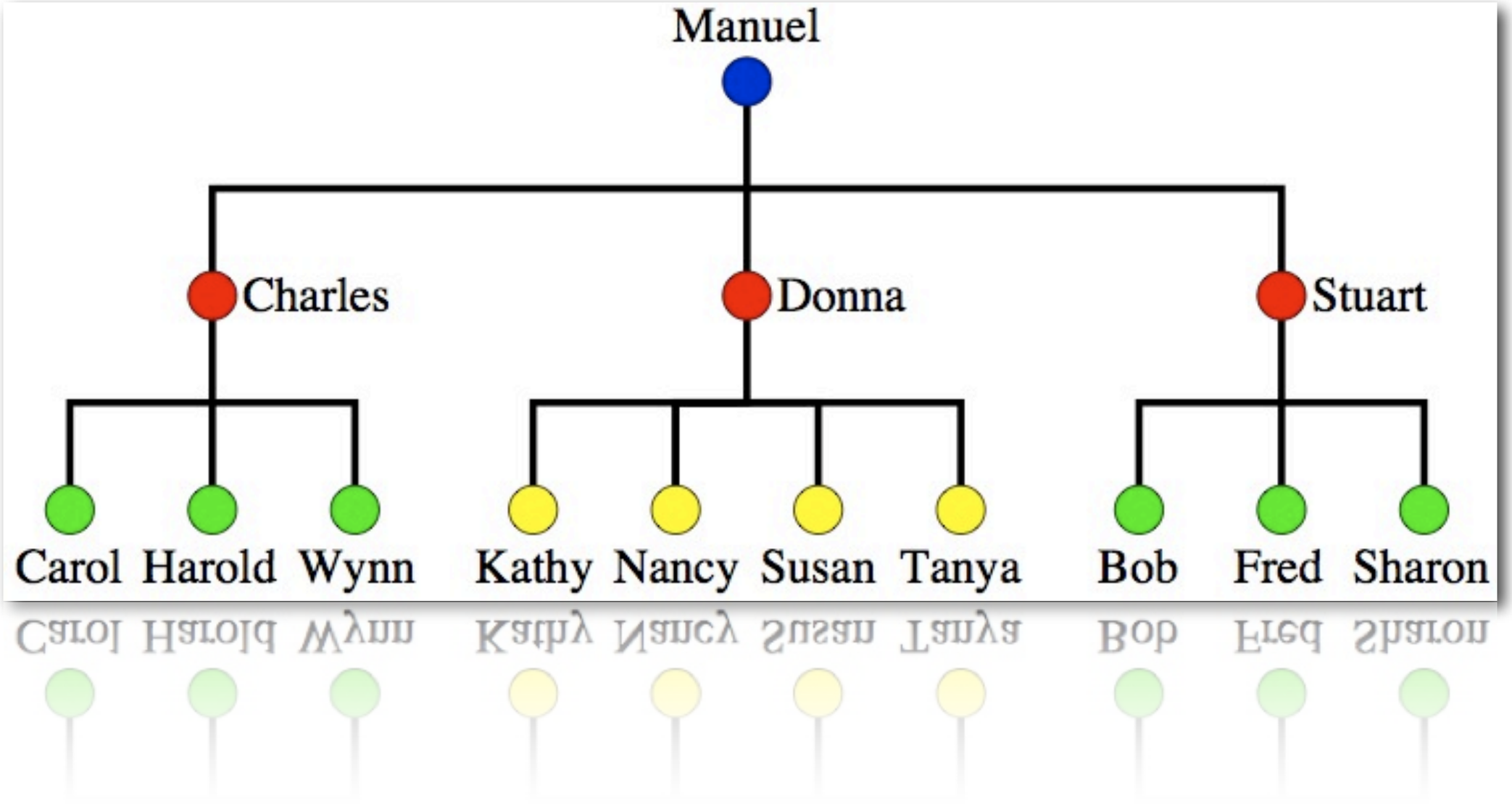




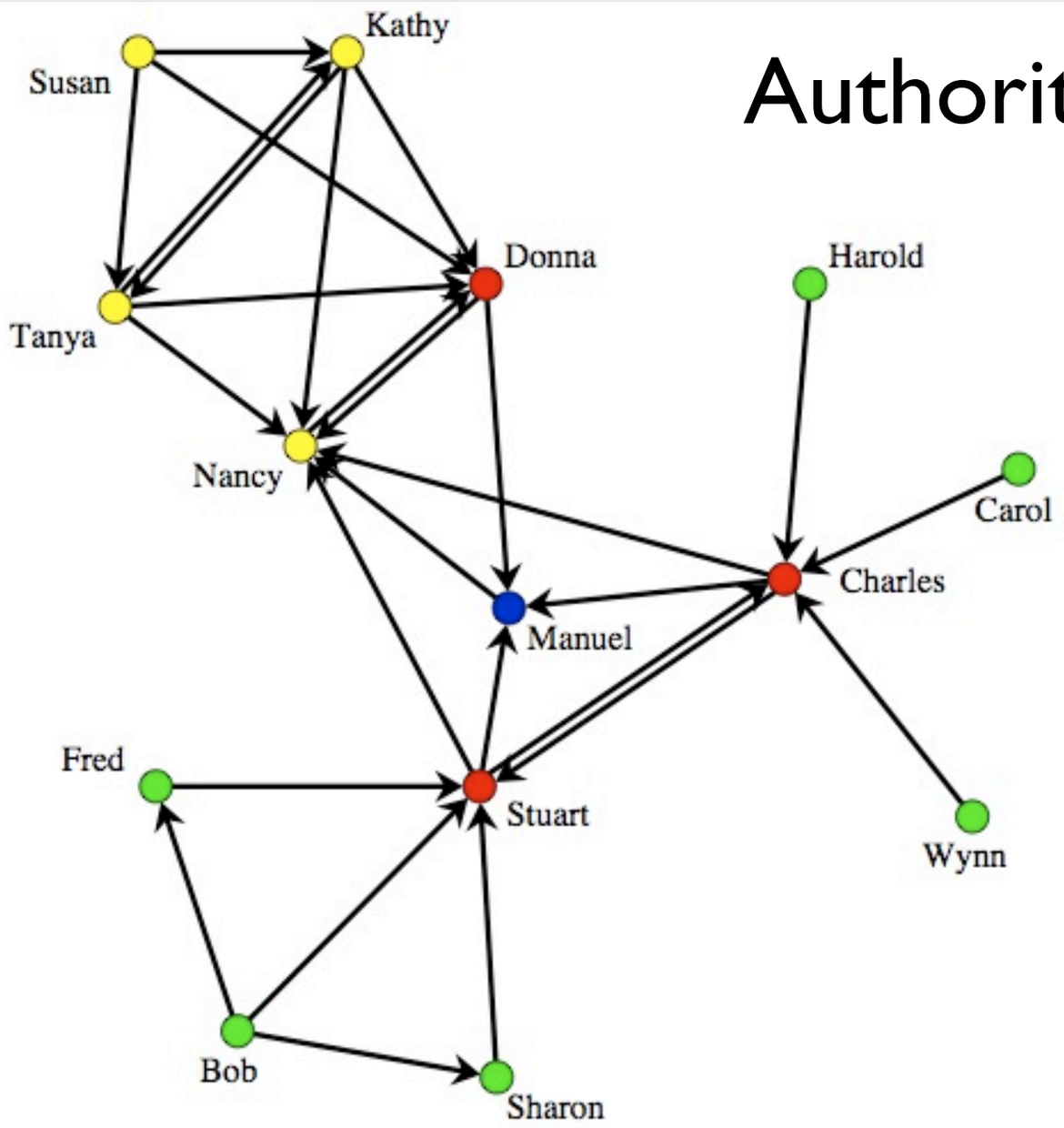


[Kleinberg 1999]

Organizational Chart



Social Network Chart



Authority vs. Importance

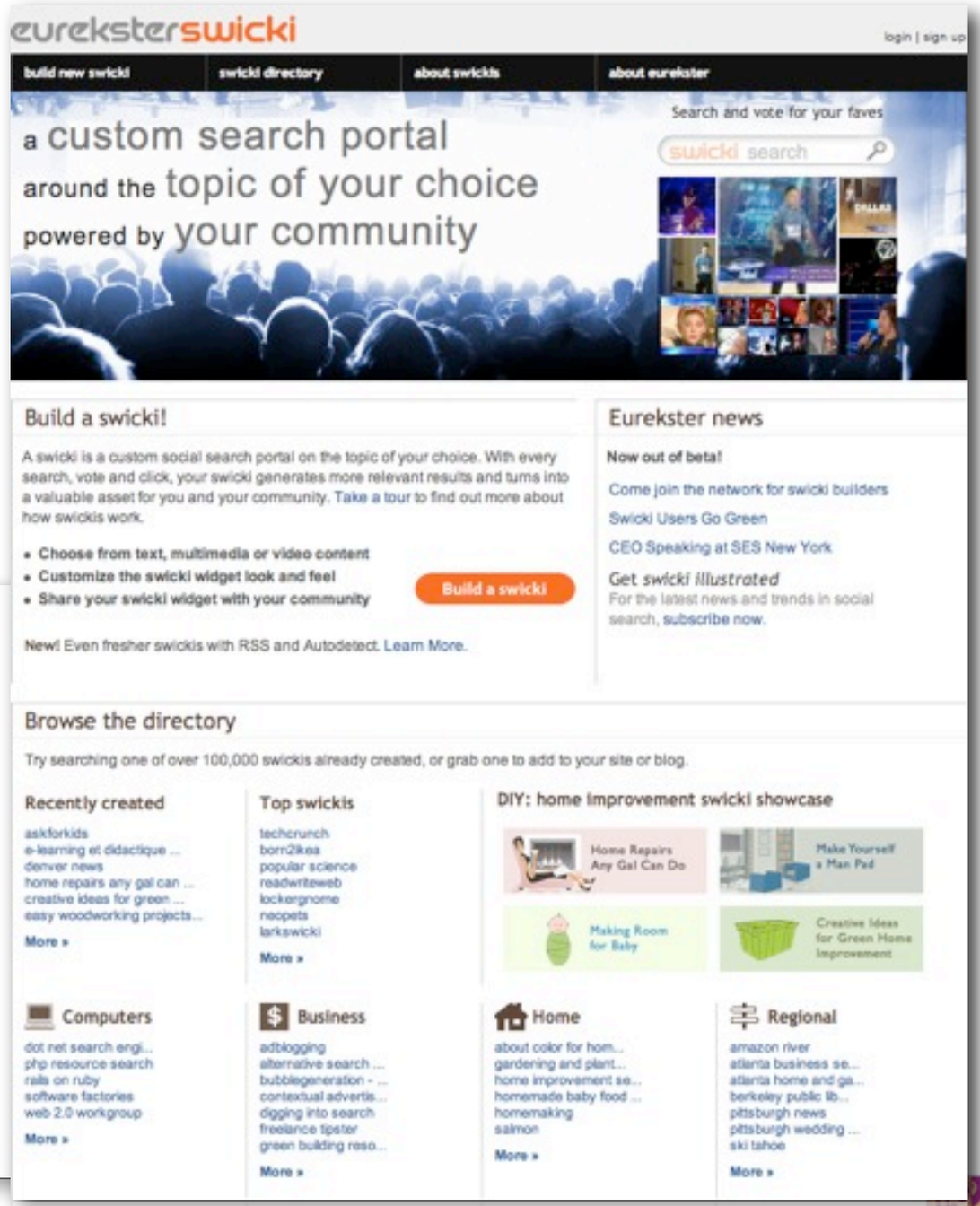
1.00	Nancy	(secretary)
0.66	Donna	(supervisor)
0.57	Manuel	(manager)
0.19	Stuart	(supervisor)
0.17	Charles	(supervisor)
0.08	Kathy	(secretary)
	Tanya	(secretary)
0.02	Fred	(auditor)
	Sharon	(auditor)
0.00	Bob	(auditor)
	Carol	(auditor)
	Harold	(auditor)
	Wynn	(auditor)
	Susan	(secretary)

Social Networking Sites

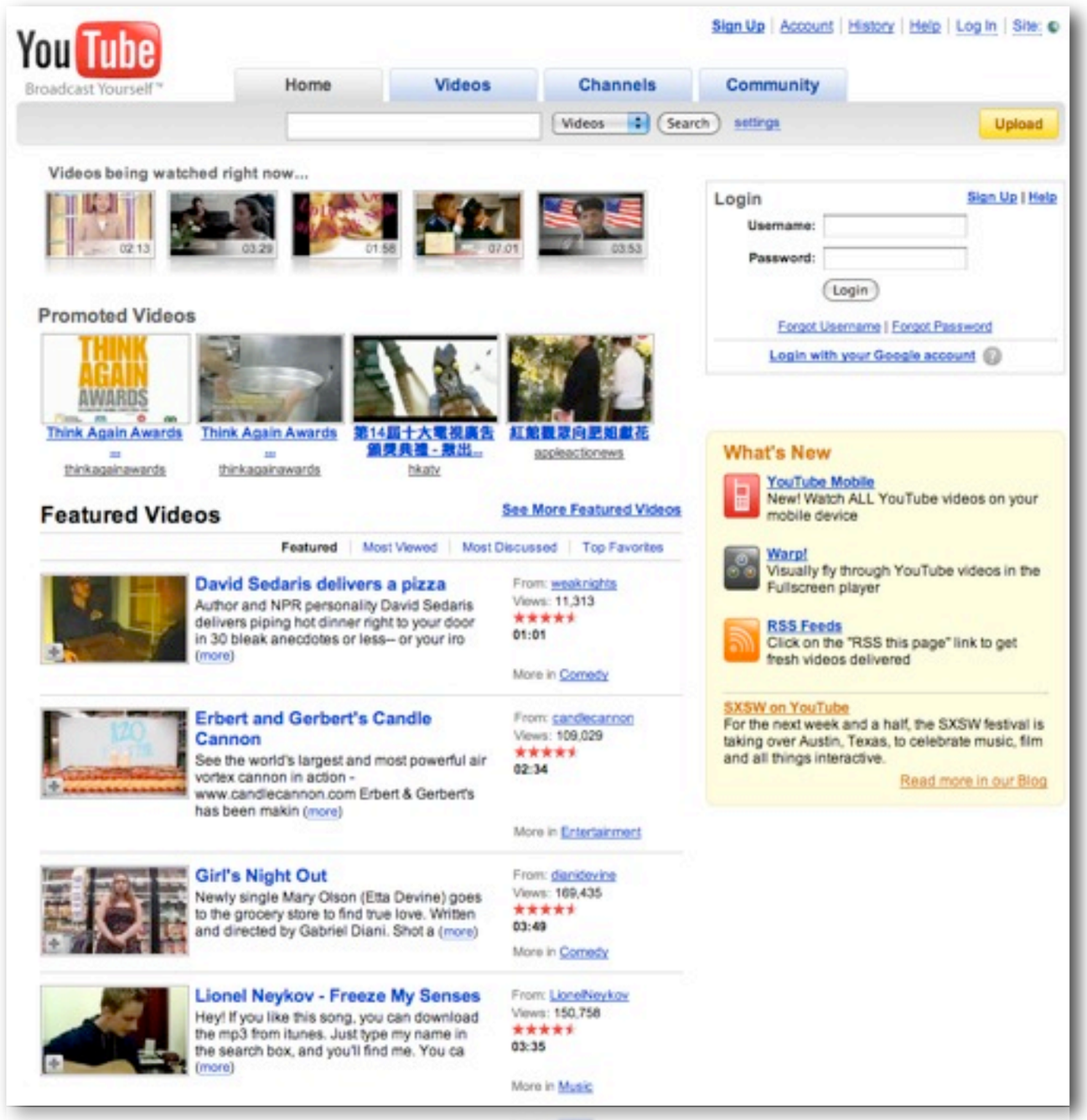
- Example of Social Networking Sites: FaceBook, MySpace, Blogger, QQ, etc.

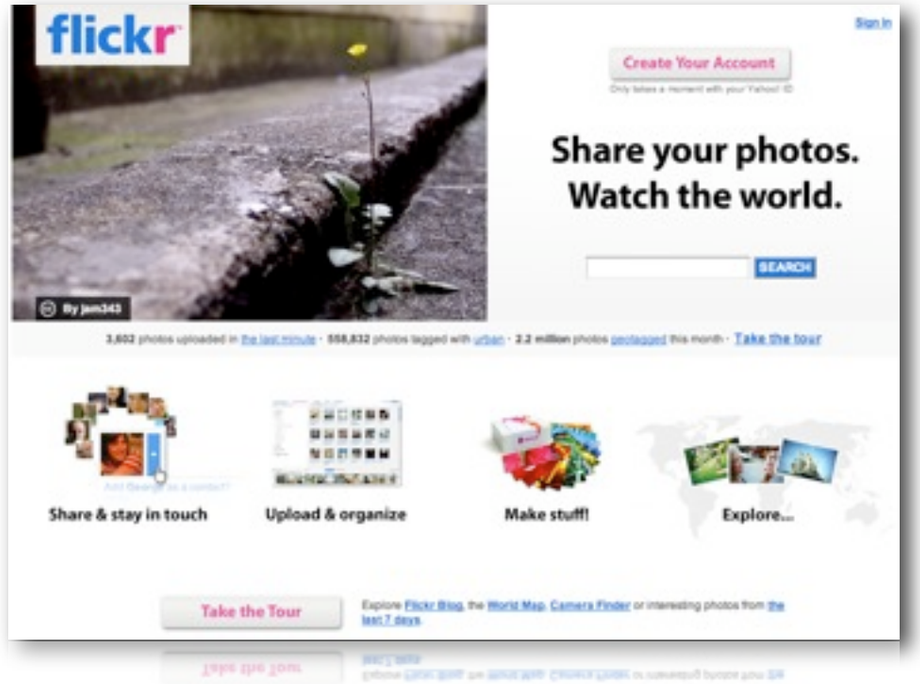
Social Search

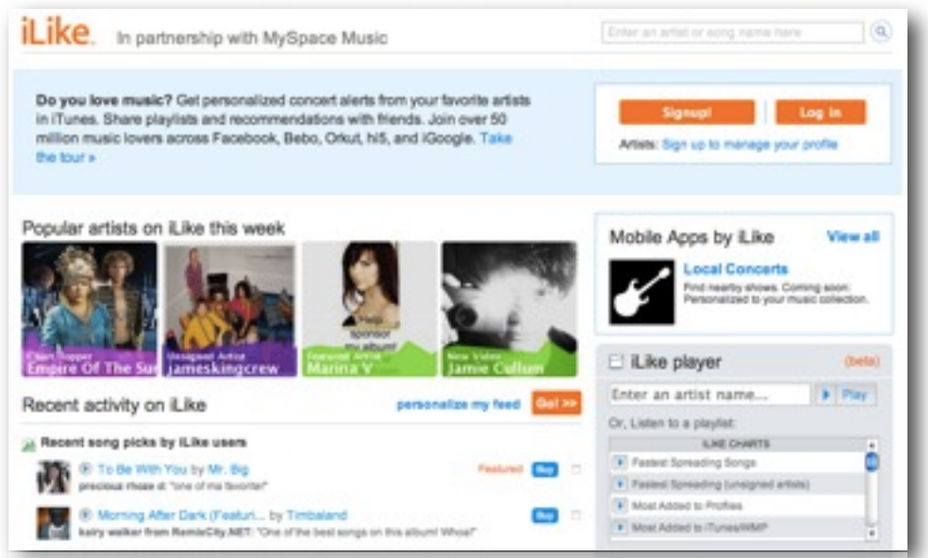
- Social Search Engine
- Leveraging your social networks for searching



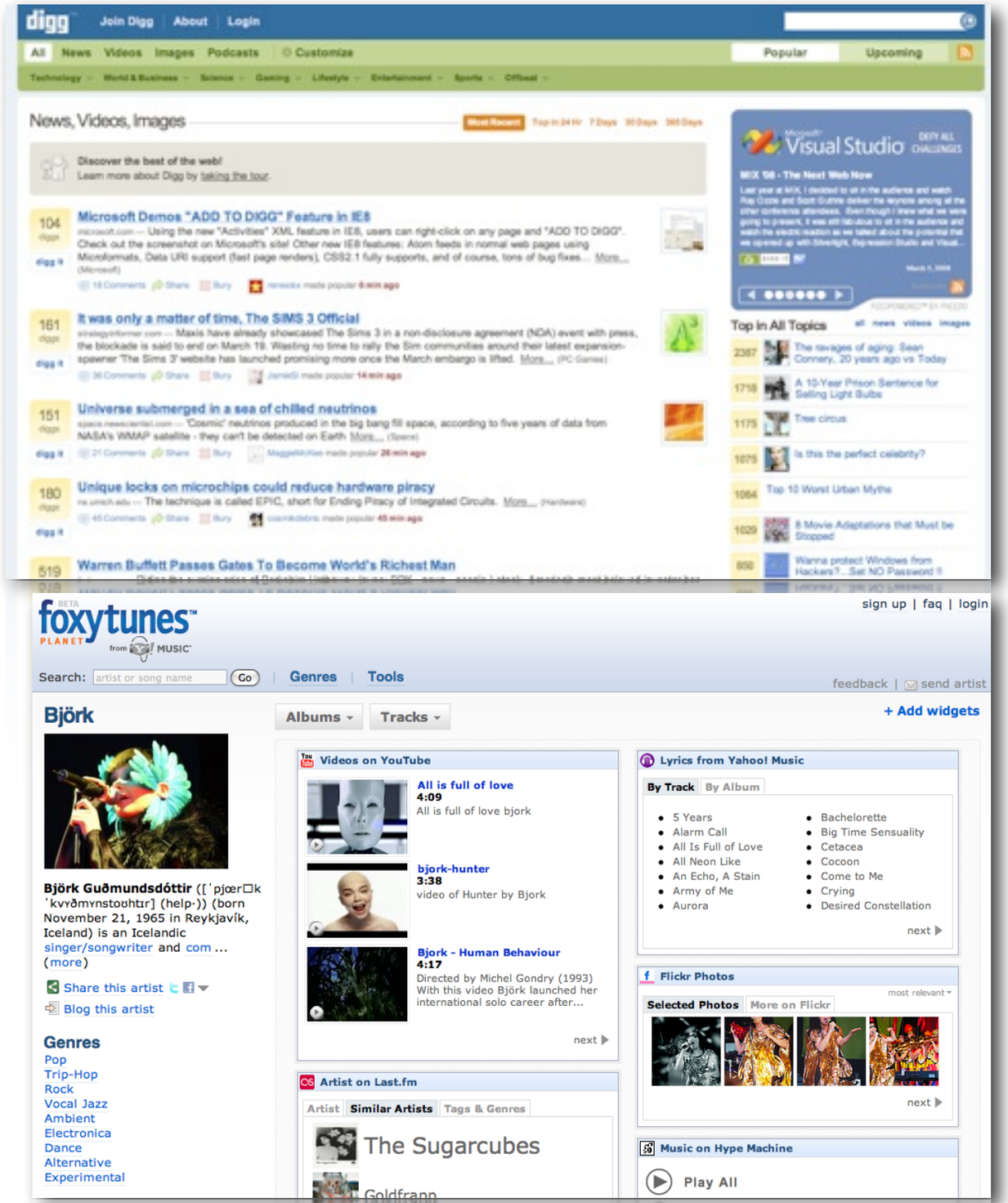
Social Media



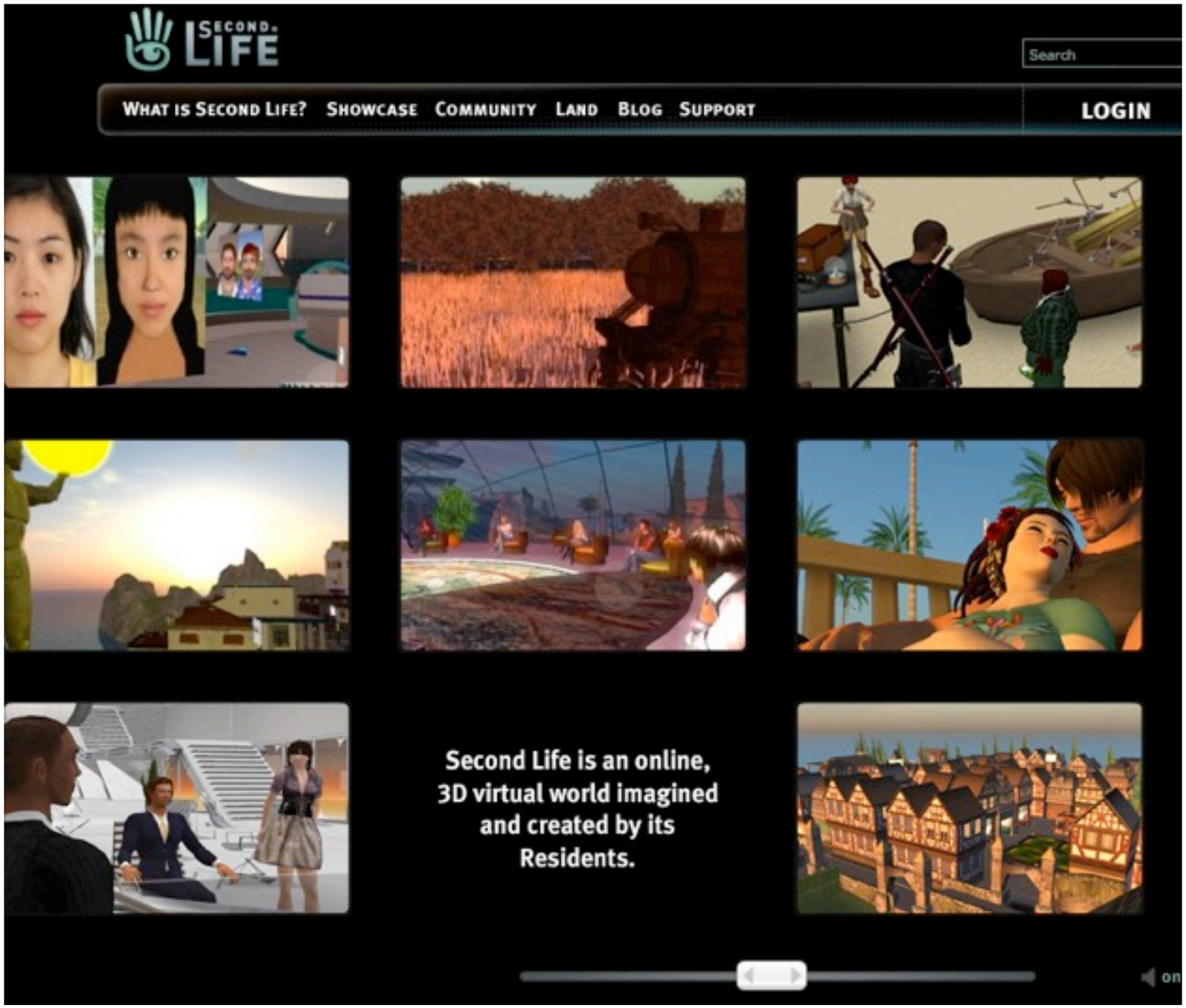




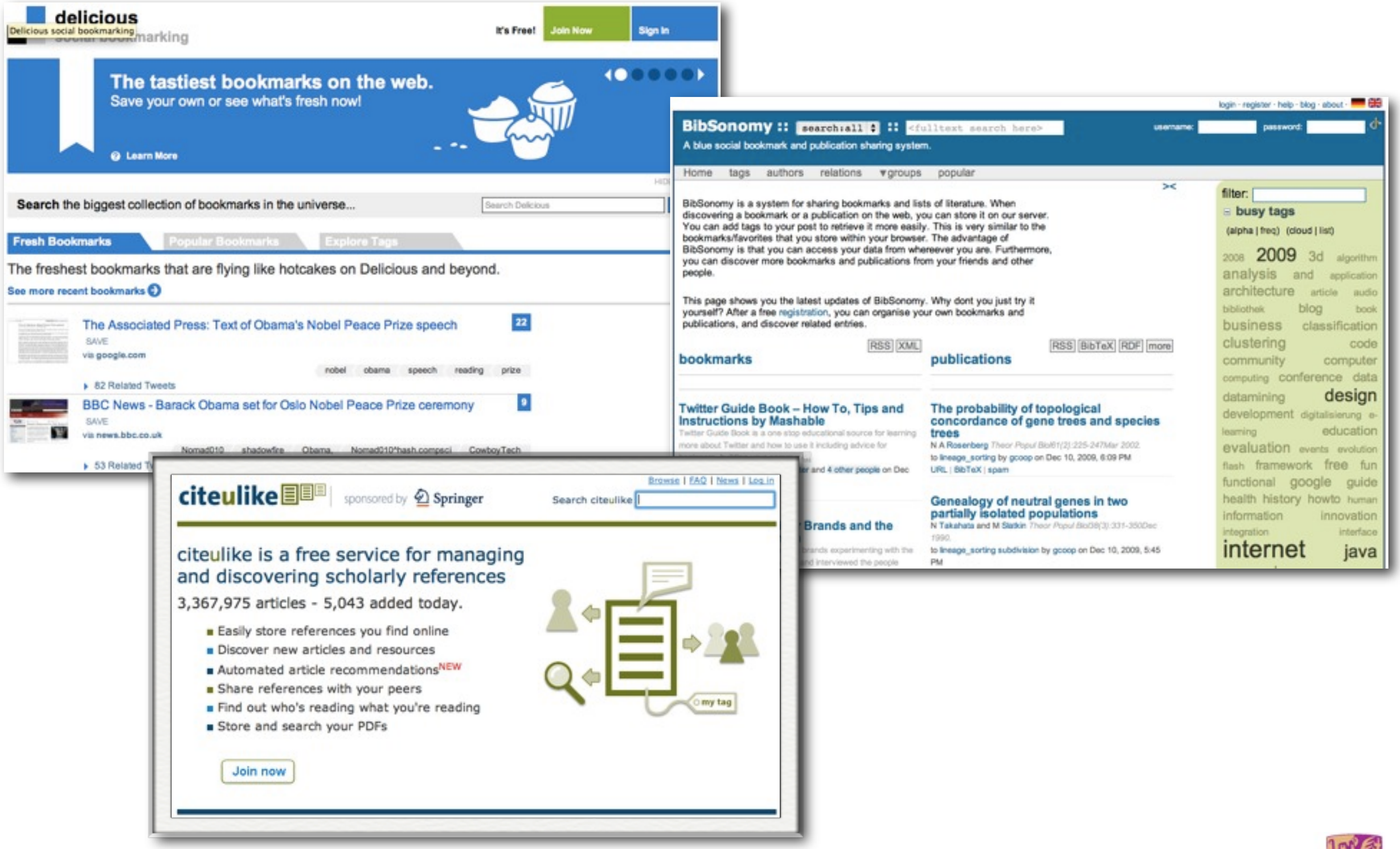
Social News/Mash Up



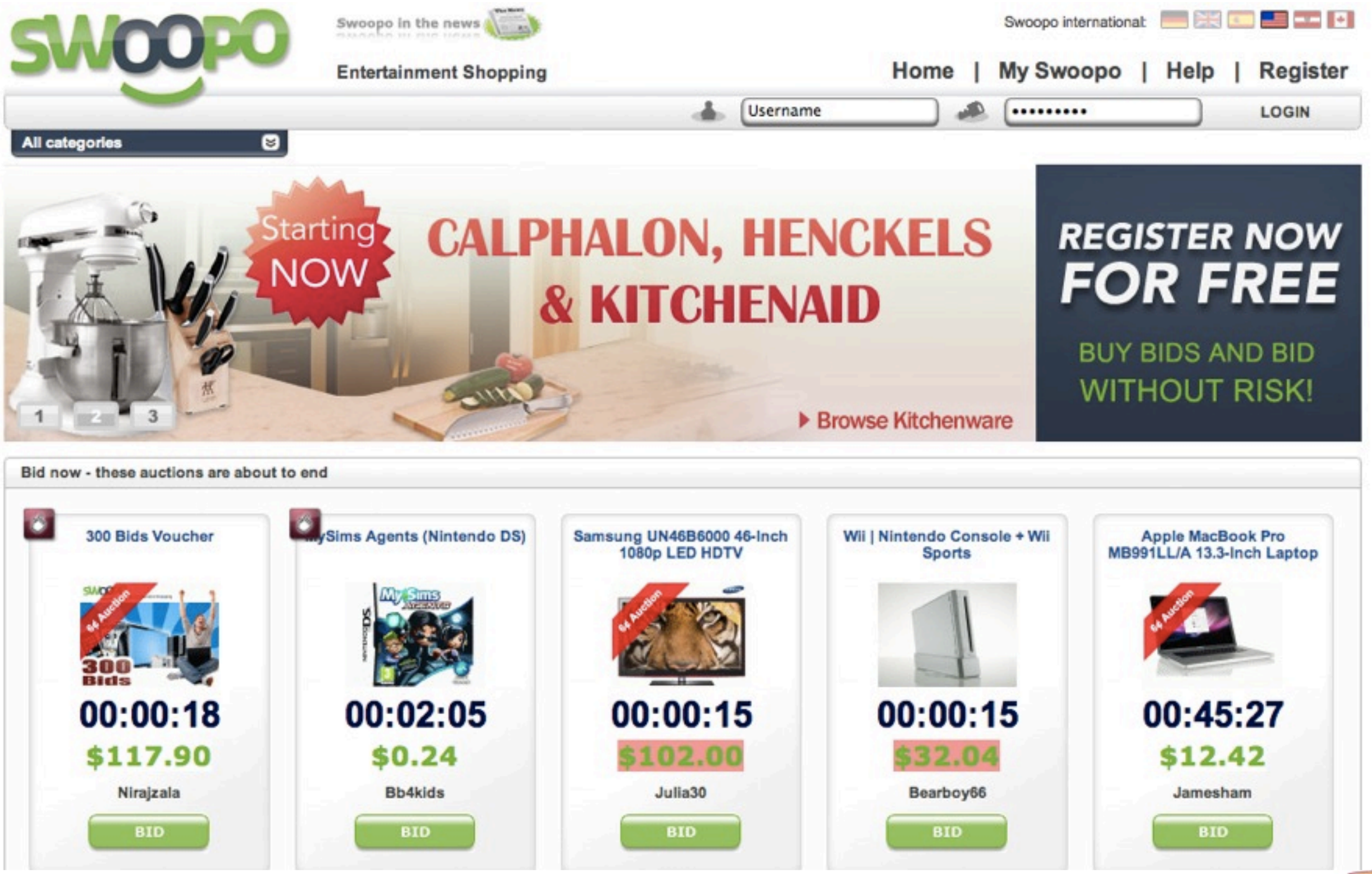
On-line Games and Virtual Communities



Social Bookmarking



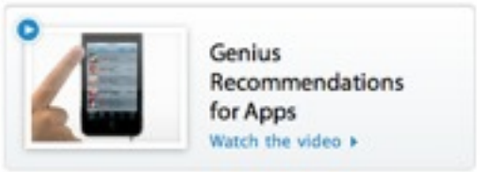
Social Entertainment

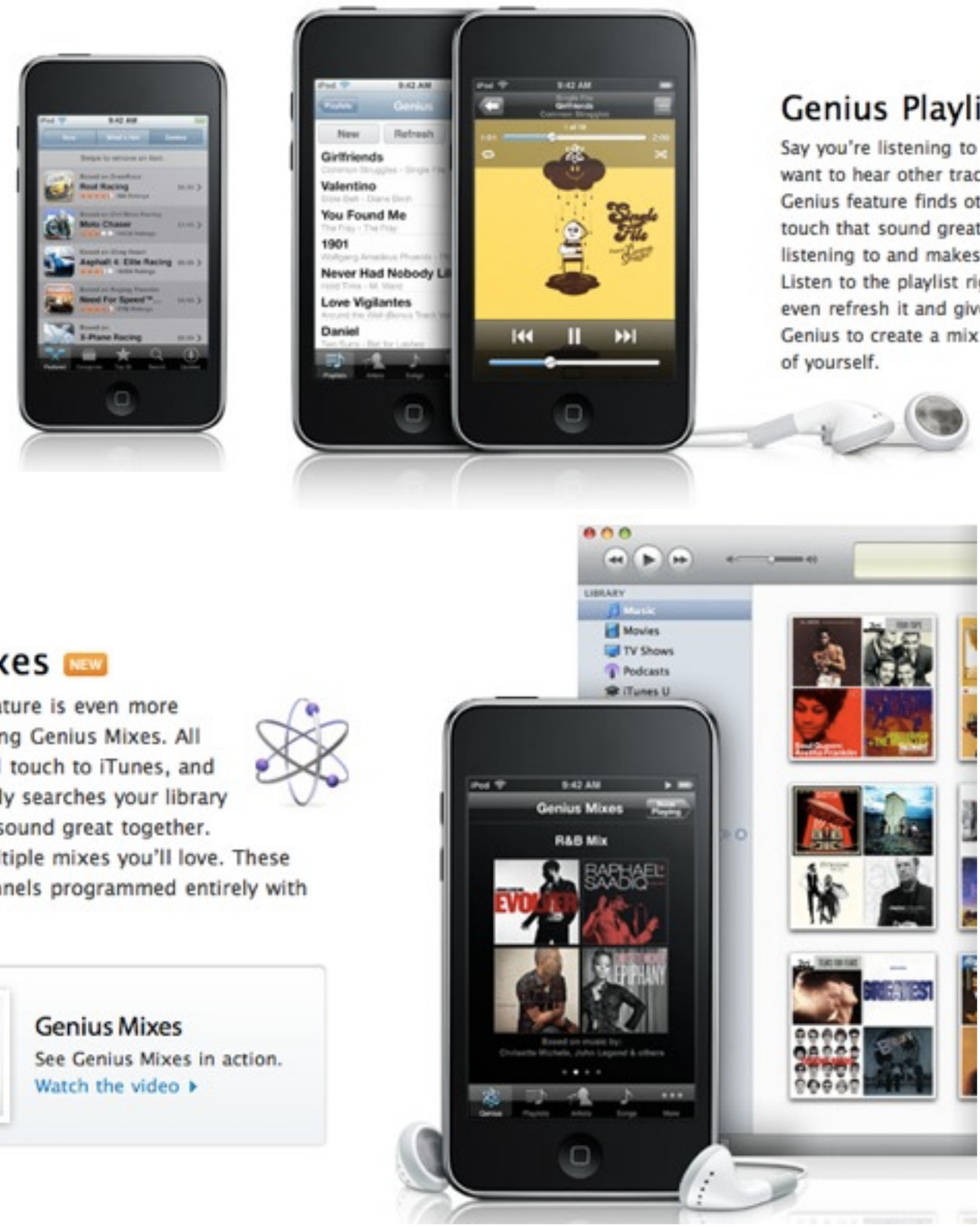


Social Recommendations

Genius Recommendations for Apps NEW

There are tens of thousands of apps in the App Store, with more added every day. A new feature of iPod touch makes finding cool new apps even easier. It's Genius for apps, and it works just like Genius for your music. Tap the Genius icon and get recommendations for apps that you might like based on apps you and others have downloaded.





Genius Playlists

Say you're listening to a song you really like and want to hear other tracks that go great with it. The Genius feature finds other songs on your iPod touch that sound great with the one you were listening to and makes a Genius playlist for you. Listen to the playlist right away, save it for later, or even refresh it and give it another go. Count on Genius to create a mix you wouldn't have thought of yourself.

Genius Mixes NEW

Now the Genius feature is even more powerful. Introducing Genius Mixes. All you do is sync iPod touch to iTunes, and Genius automatically searches your library to find songs that sound great together. Then it creates multiple mixes you'll love. These mixes are like channels programmed entirely with your music.

Social Informatics

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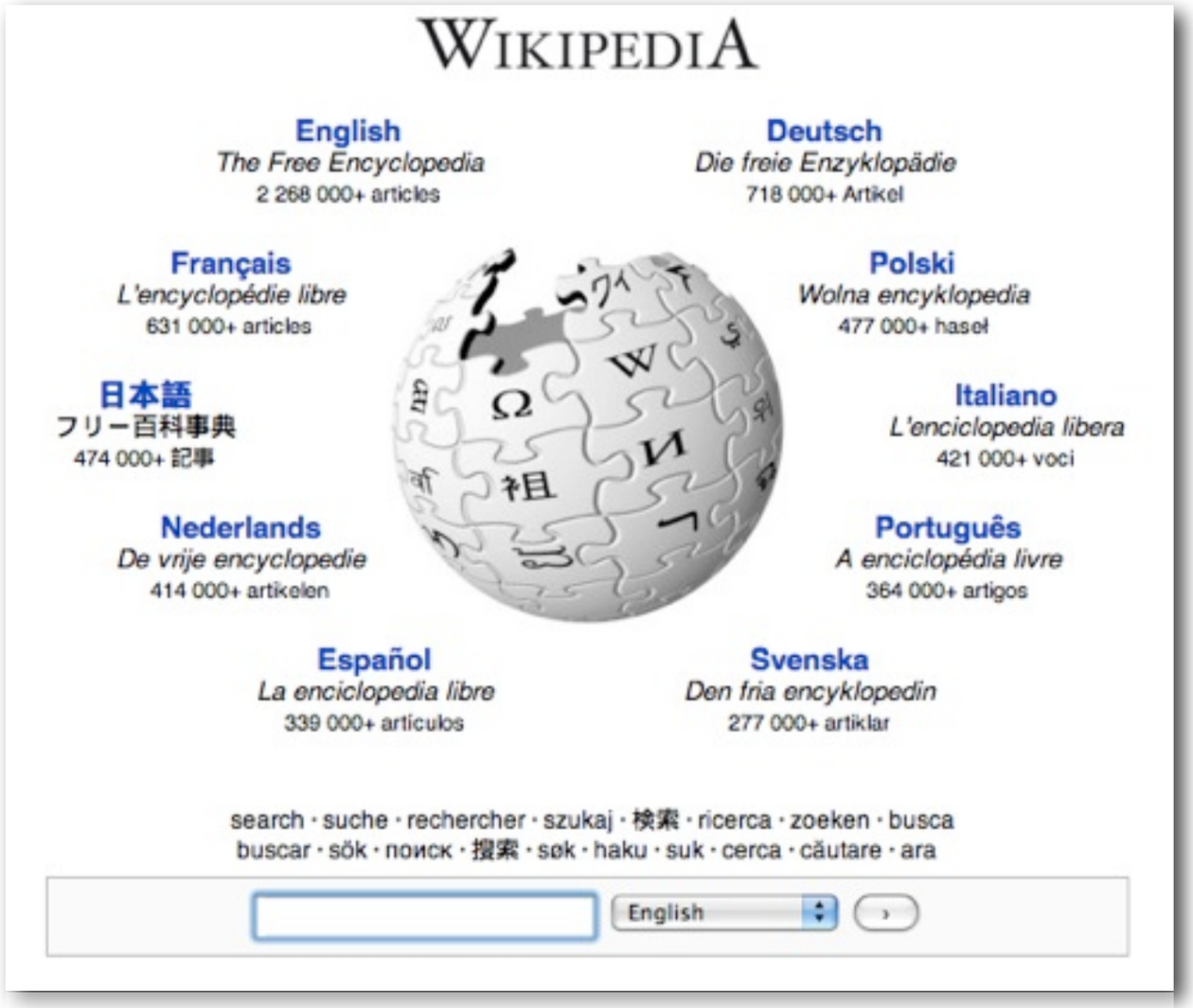
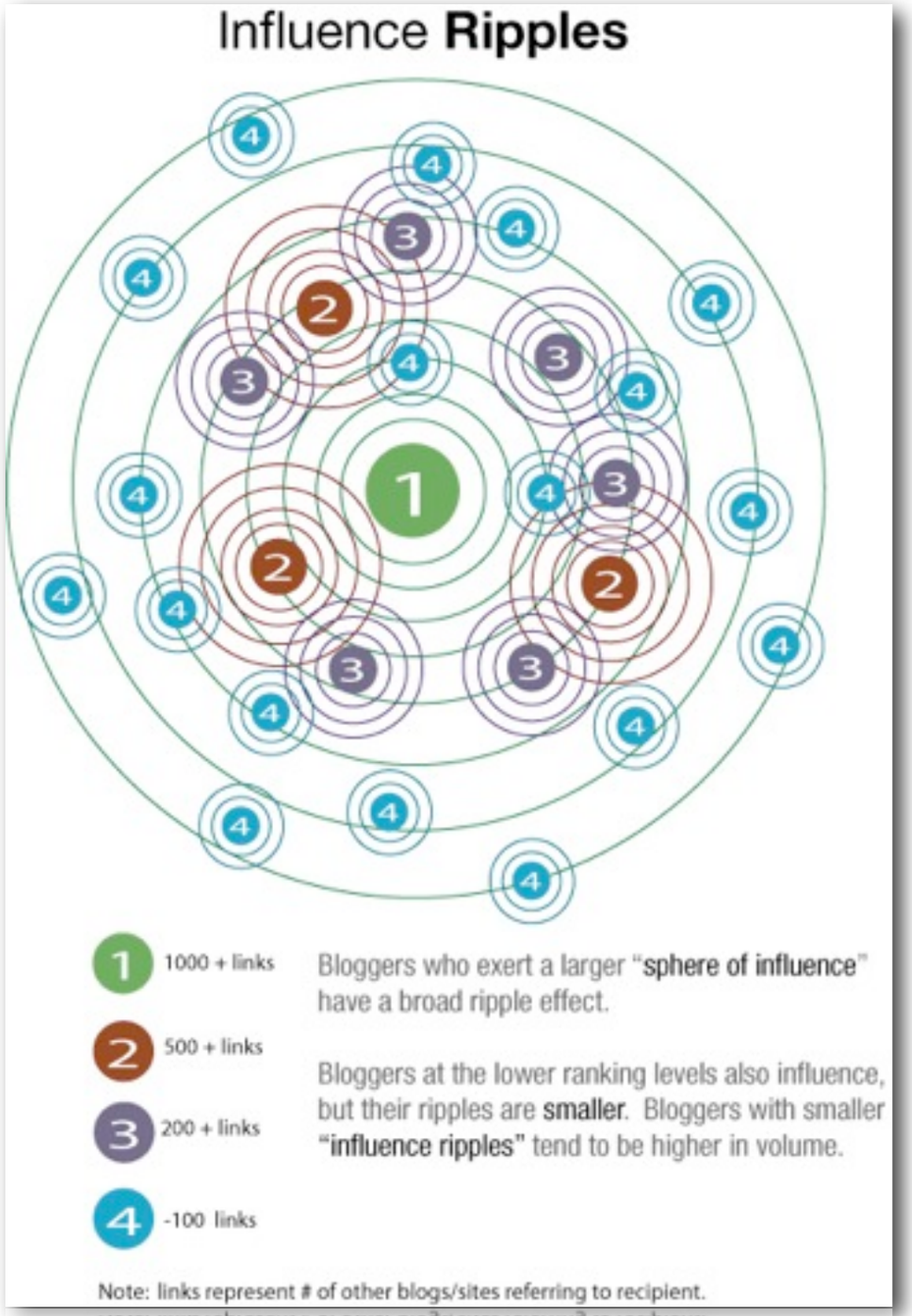
Social Knowledge Sharing

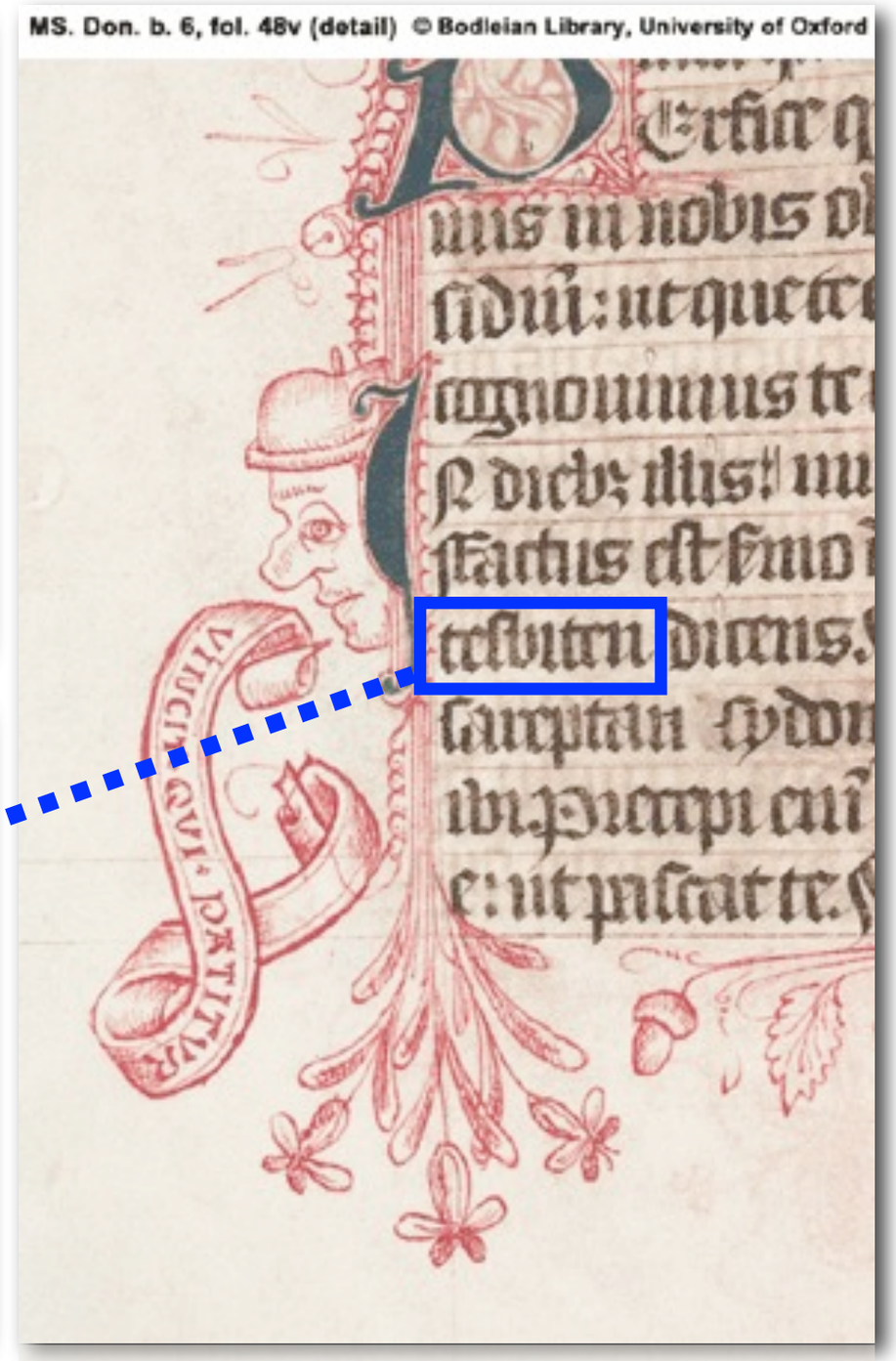


Social Marketing

- Viral marketing
- Who are the brokers?
- Who can exert the most influence on buying/selling?
- How much should one advertise?

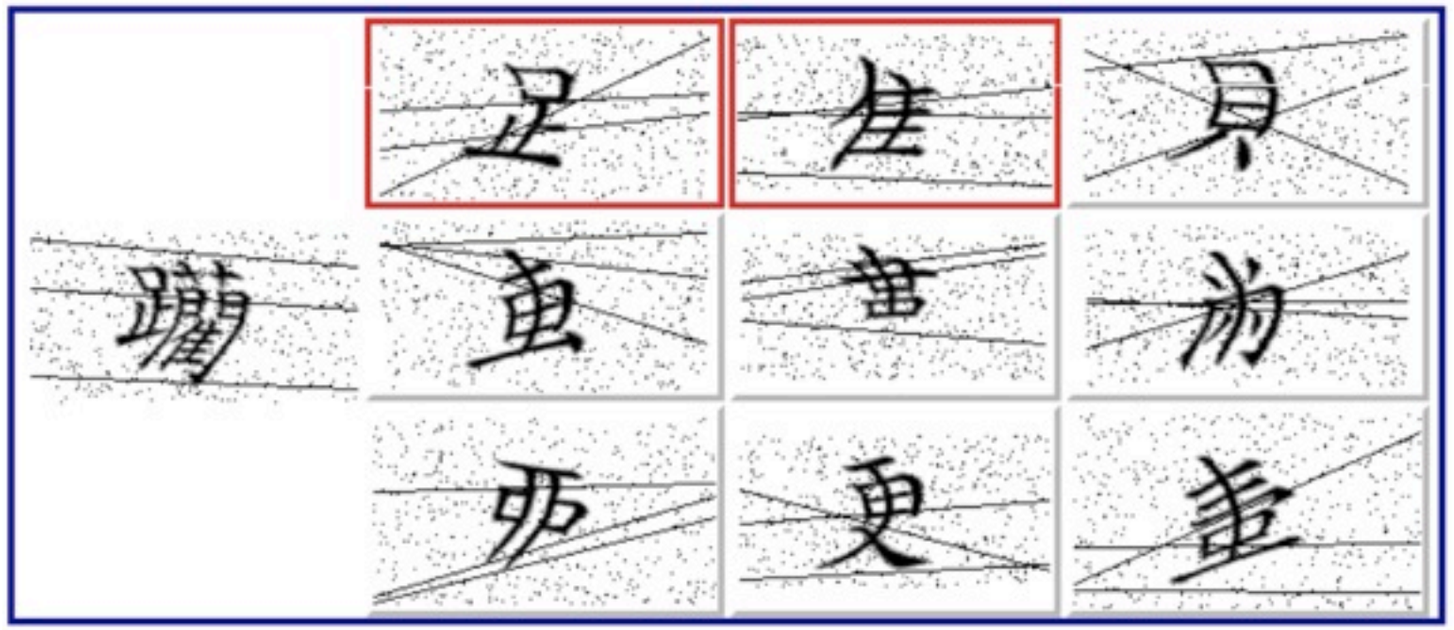


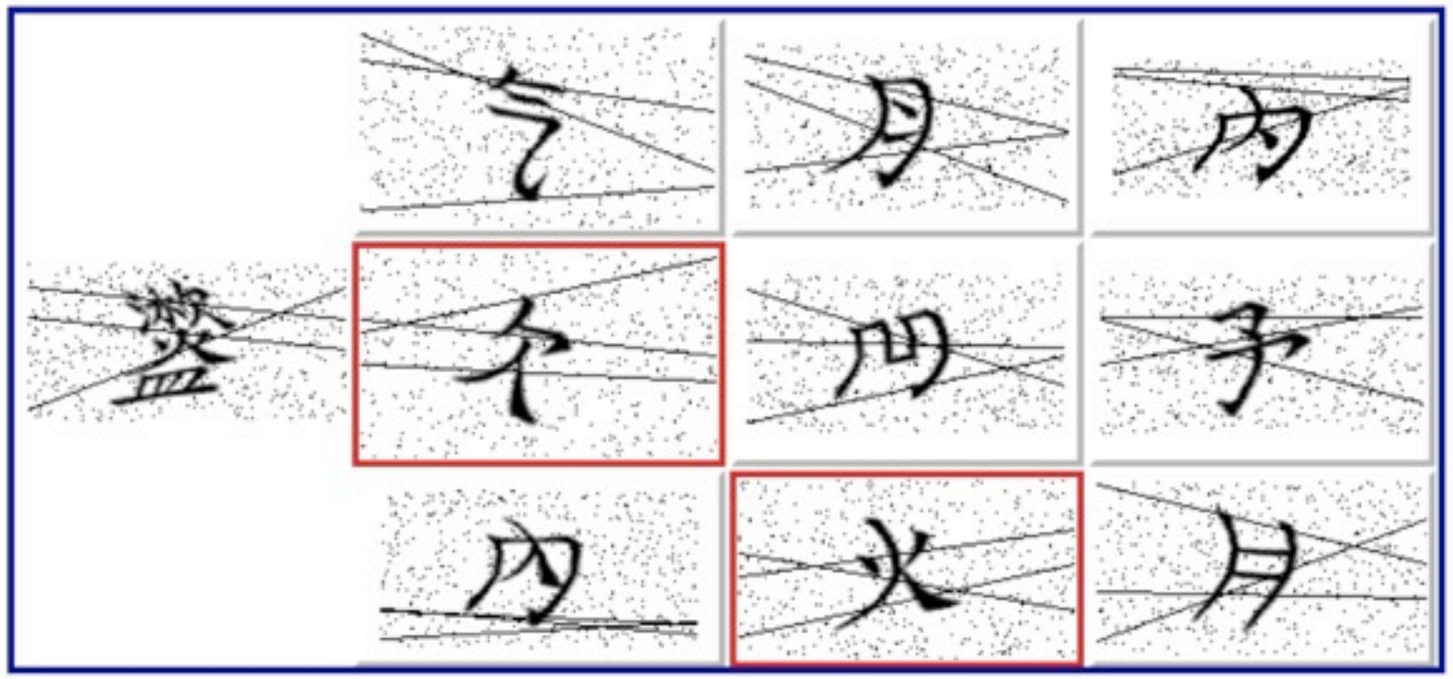
Social/Human Computation



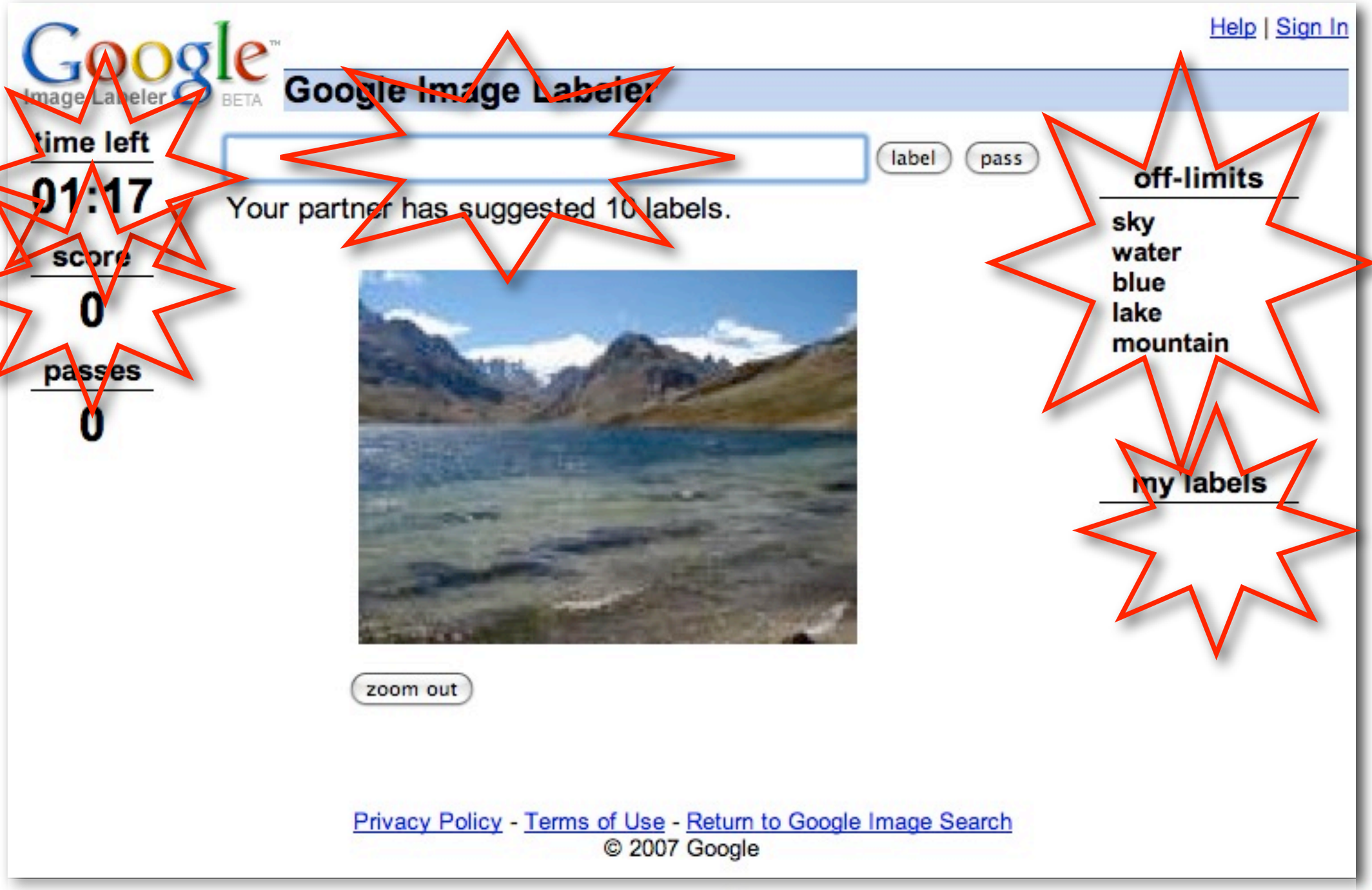
Chinese CAPTCHA

Ling-Jyh Chen, Institute of Information Science, Academia Sinica, Taipei, Taiwan





Human Computation



Games With A Purpose

- **Matchin**
  - Image search by aesthetic value
- **Babble**
  - Translate foreign language into English
- **InTune**
  - Tags songs with description text
- **Squigl**
  - Image segmentation
- **Verbosity**
  - Database of common knowledge description

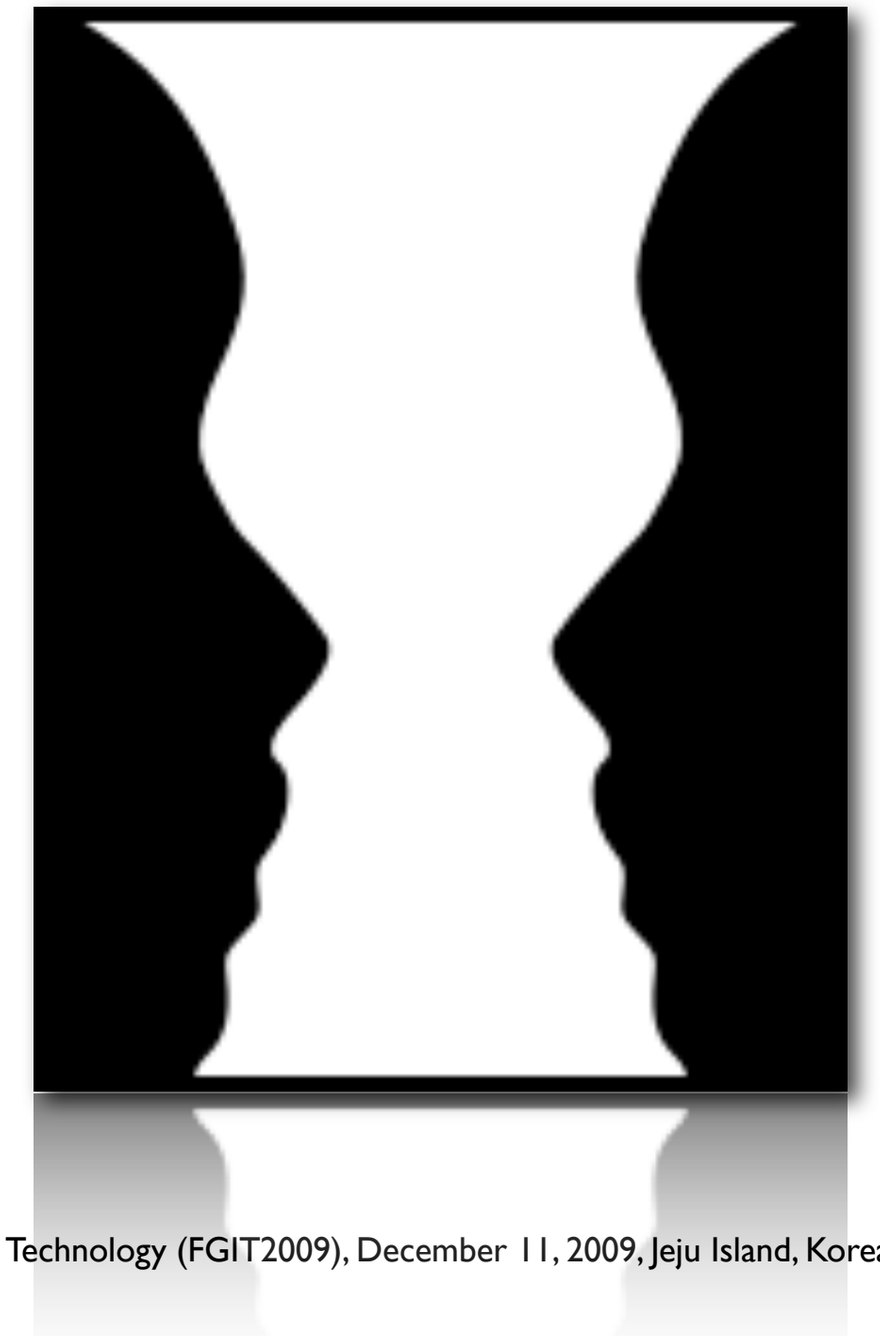
Web 2.0 Revolution

- Glocalization-think globally and act locally!
- Weblication-Web is the application!
- Three C's

  Connectivity

  Collaboration

  Communities



Social Relations

crew

teams

populations

squad

organizations

cohorts

markets

communities

partners

groups

binary

cardinal

integer

real

presence

identity

social role

reputation

expertise

trust

ownership

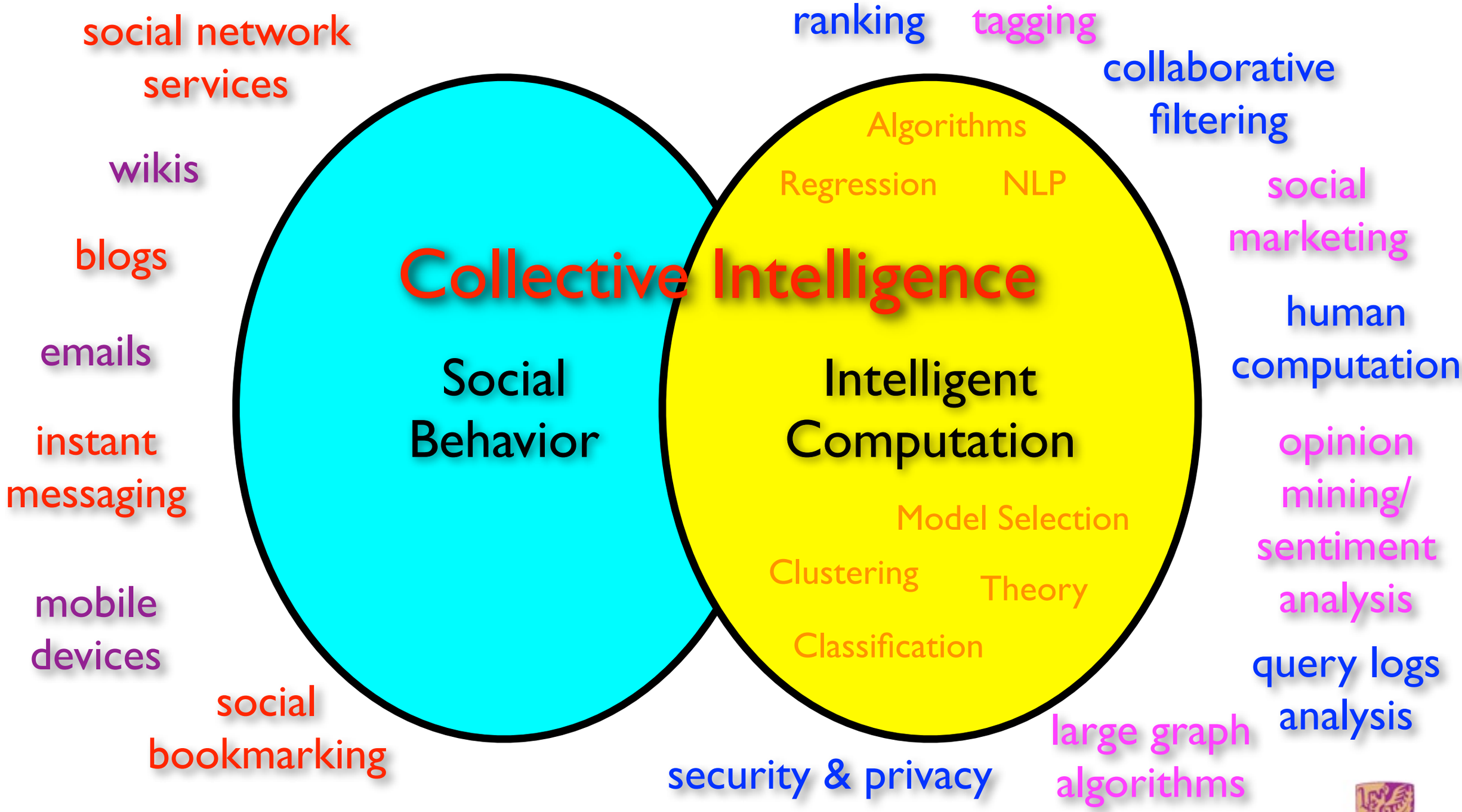
accountability

knowledge

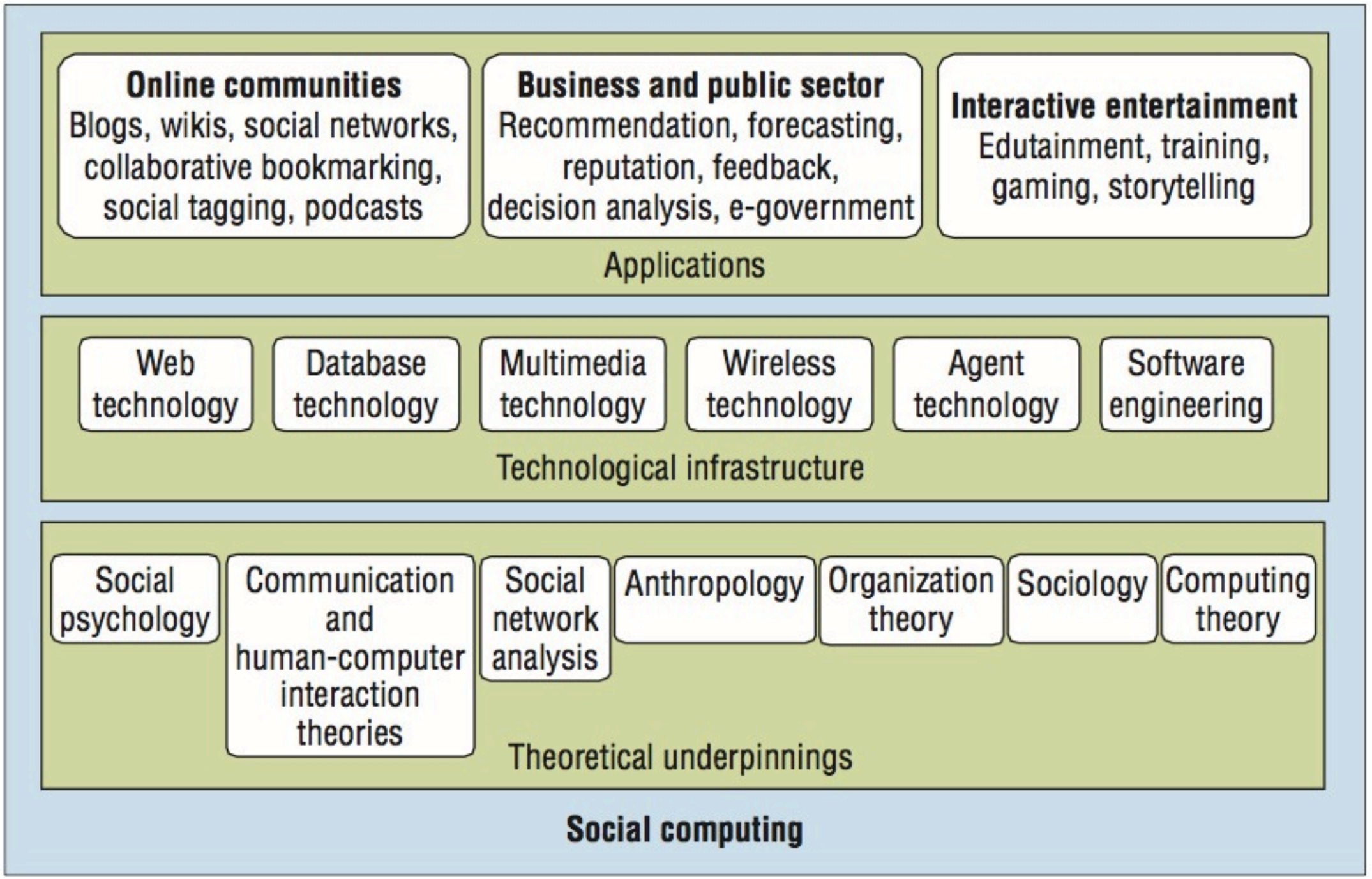
Topics in Social Computing

- Social Behavior Analysis and Modeling
- Social Media
- Social Network Theory and Models
- Link Analysis/Graph Mining/ Large Graph Algorithms
- Recommender Systems/ Collaborative Filtering
- QA/Sentiment Analysis/ Opinion Mining
- Human Computation/ Crowdsourcing
- Risk, Trust, Security, and Privacy
- Monetization of Social Computing
- Software Tools and Applications
- and many, many more...

Social Computing



Social Computing

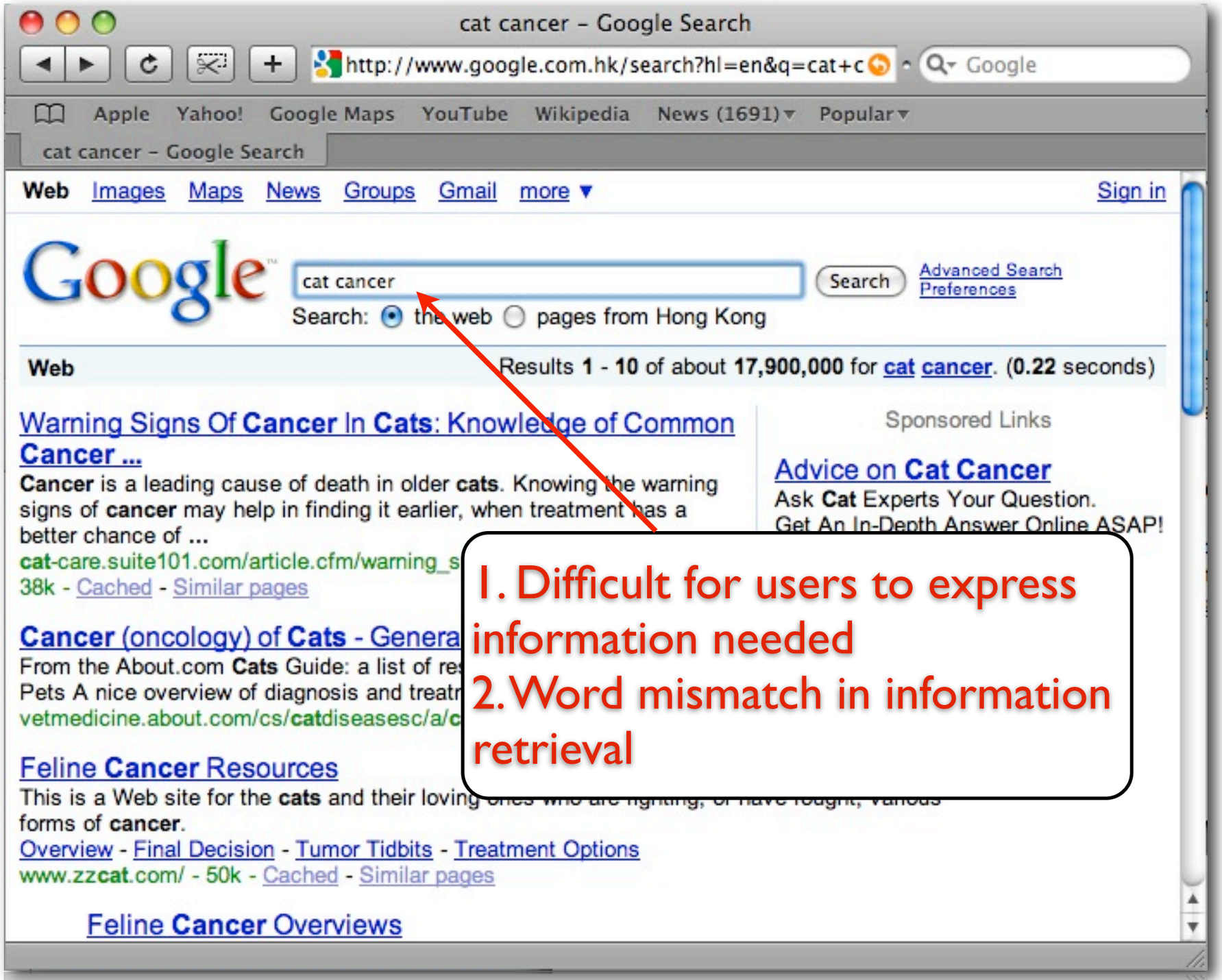


[Wang et al. 2007]

Definition of Social Computing [wiki]

- Any Computer-mediated communication and interaction
- In the weaker sense: supporting any sort of social behavior
  - blogs, email, instant messaging, wiki, social network services, social bookmarking
- In the stronger sense: supporting "computations" that are carried out by a group of people
  - collaborative filtering, online auctions, prediction markets, reputation systems, tagging, verification games

Motivation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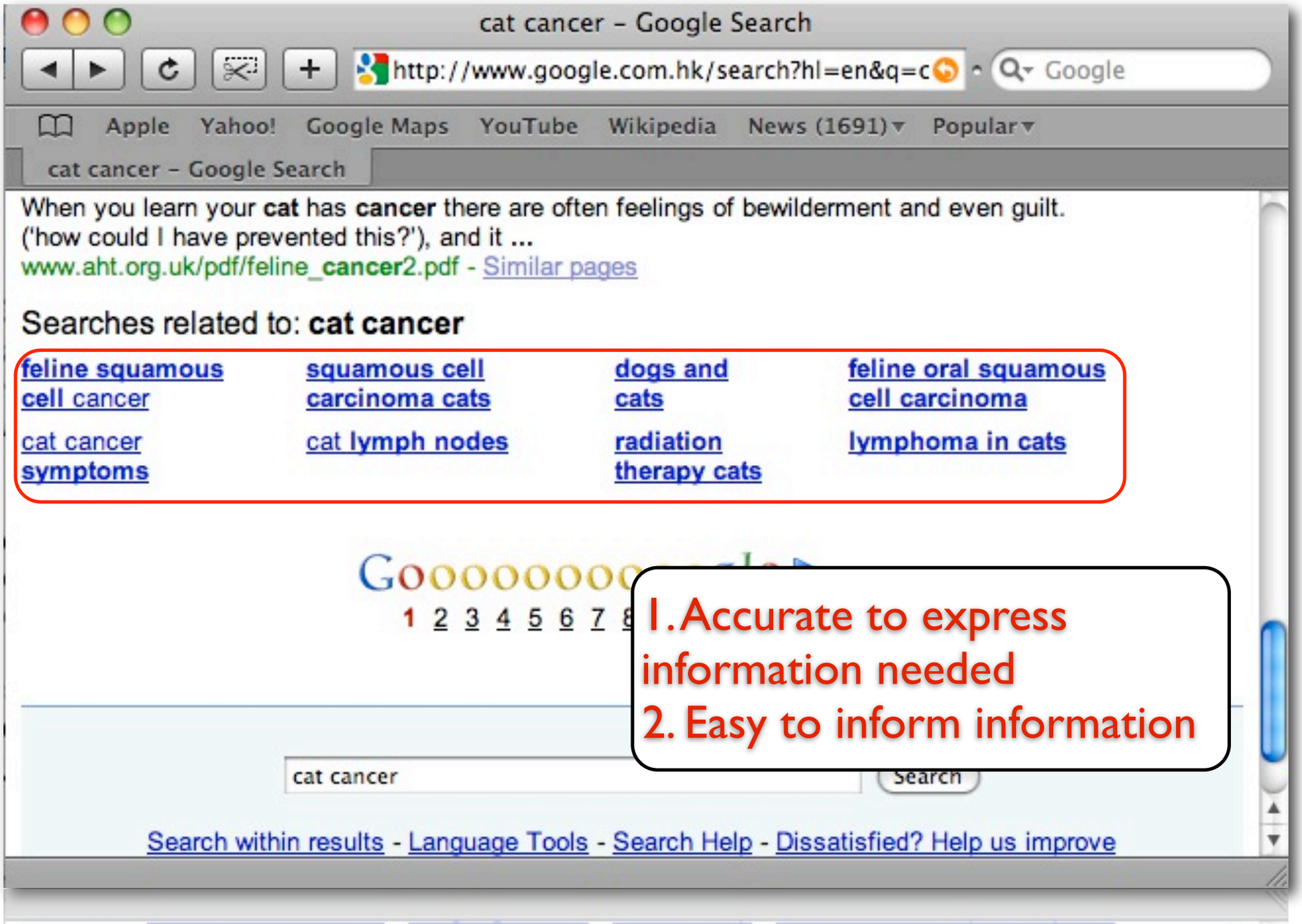
Web Images Maps News Groups Gmail more ▼
Sign in
Google
cat cancer
Search
Advanced Search
Preferences
Search: the web pages from Hong Kong
Web
Results 1 - 10 of about 17,900,000 for cat cancer. (0.22 seconds)
Warning Signs Of Cancer In Cats: Knowledge of Common Cancer ...
Cancer is a leading cause of death in older cats. Knowing the warning signs of cancer may help in finding it earlier, when treatment has a better chance of ...
cat-care.suite101.com/article.cfm/warning_s
38k - Cached - Similar pages
Cancer (oncology) of Cats - Genera
From the About.com Cats Guide: a list of re
Pets A nice overview of diagnosis and treatr
vetmedicine.about.com/cs/catdiseasesc/a/c
Feline Cancer Resources
This is a Web site for the cats and their loving
forms of cancer.
Overview - Final Decision - Tumor Tidbits - Treatment Options
www.zzcat.com/ - 50k - Cached - Similar pages
Feline Cancer Overviews
Sponsored Links
Advice on Cat Cancer
Ask Cat Experts Your Question.
Get An In-Depth Answer Online ASAP!
1. Difficult for users to express information needed
2. Word mismatch in information retrieval

Motivation


cat cancer - Google Search
http://www.google.com.hk/search?hl=en&q=c
Google
Apple
Yahoo!
Google Maps
YouTube
Wikipedia
News (1691)
Popular
cat cancer - Google Search
When you learn your cat has cancer there are often feelings of bewilderment and even guilt. ('how could I have prevented this?'), and it ...
www.aht.org.uk/pdf/feline_cancer2.pdf - Similar pages
Searches related to: cat cancer
feline squamous cell cancer
squamous cell carcinoma cats
dogs and cats
feline oral squamous cell carcinoma
cat cancer symptoms
cat lymph nodes
radiation therapy cats
lymphoma in cats
1 2 3 4 5 6 7 8
cat cancer
Search
Search within results - Language Tools - Search Help - Dissatisfied? Help us improve
1. Accurate to express information needed
2. Easy to inform information

Challenges

- Queries contain ambiguous and new terms
  - apple: "apple computer" or "apple pie"?
  - NDCG:?
- Users tend to submit short queries consisting of only one or two words
  - almost 20% one-word queries
  - almost 30% two-word queries

- Users may have little or even no knowledge about the topic they are searching for!

Query Suggestion Using Clickthrough Data

- Query logs recorded by search engines

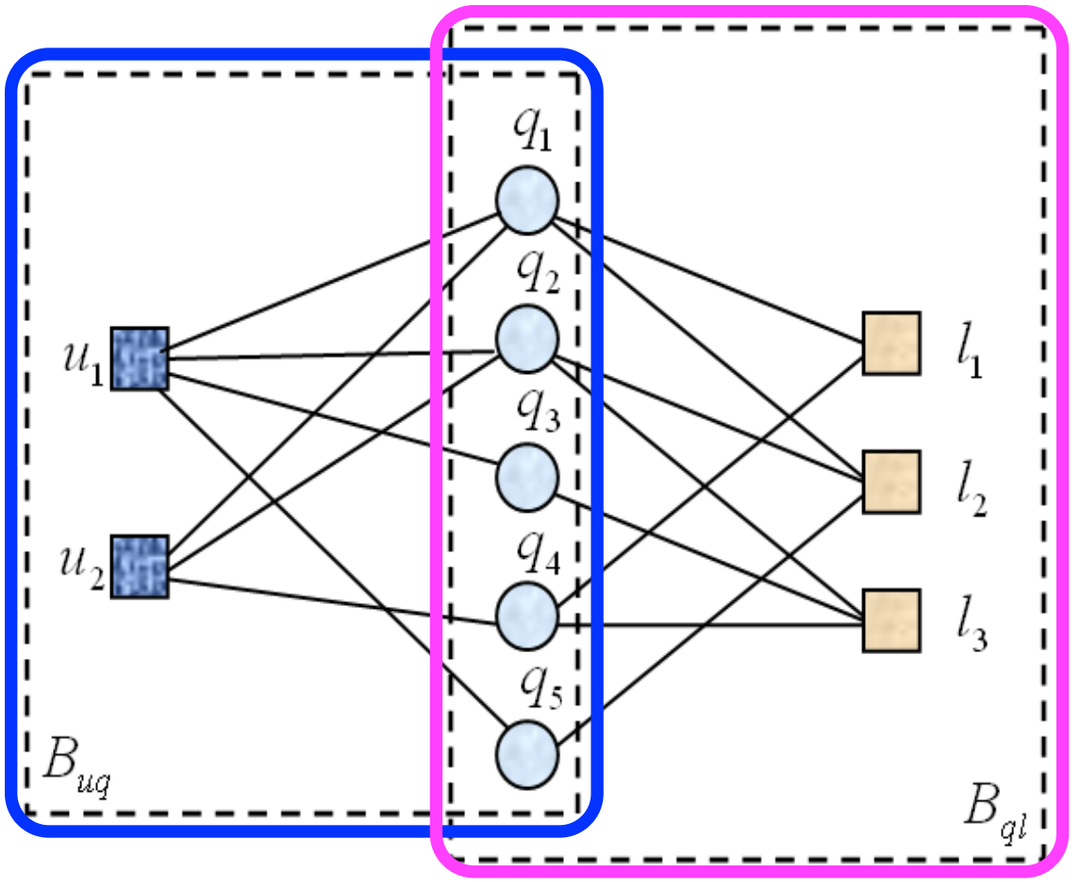
$$\langle u, q, l, r, t \rangle$$

Table 1: Samples of search engine clickthrough data

ID	Query	URL	Rank	Time
358	facebook	http://www.facebook.com	1	2008-01-01 07:17:12
358	facebook	http://en.wikipedia.org/wiki/Facebook	3	2008-01-01 07:19:18
3968	apple iphone	http://www.apple.com/iphone/	1	2008-01-01 07:20:36
...	...	...	...	...

- Users' relevance feedback to indicate desired/preferred/ target results

Joint Bipartite Graph



$B_{uq} = (V_{uq}, E_{uq})$
$V_{uq} = U \cup Q$
$U = \{u_1, u_2, ..., u_m\}$
$Q = \{q_1, q_2, ..., q_n\}$
$E_{uq} = \{(u_i, q_j) |$ there is an edge from u_i to $q_j\}$ is the set of all edges.
The edge (u_i, q_j) exists in this bipartite graph if and only if a user u_i issued a query q_j.

$B_{ql} = (V_{ql}, E_{ql})$
$V_{ql} = Q \cup L$
$Q = \{q_1, q_2, ..., q_n\}$
$L = \{l_1, l_2, ..., l_p\}$
$E_{ql} = \{(q_i, l_j) |$ there is an edge from q_i to $l_j\}$ is the set of all edges.
The edge (q_j, l_k) exists if and only if a user u_i clicked a URL l_k after issuing an query q_j.

Key Points

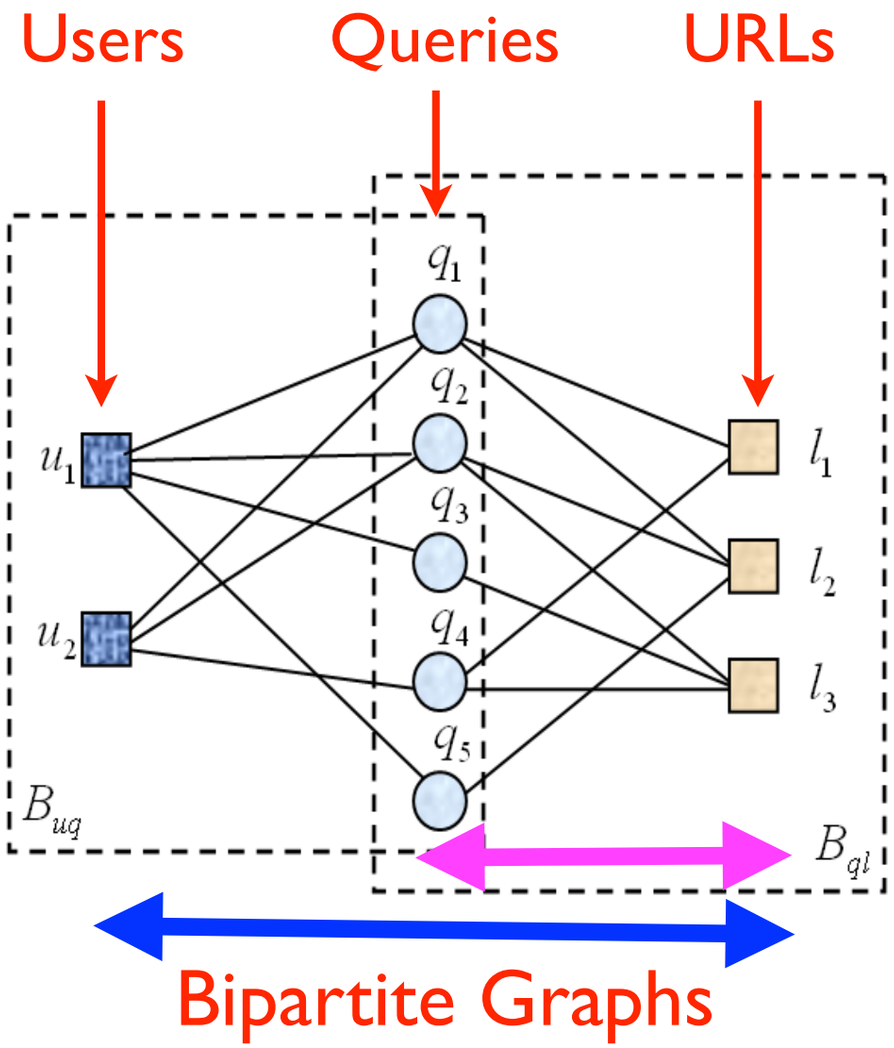
- Two-level latent semantic analysis

Level 1

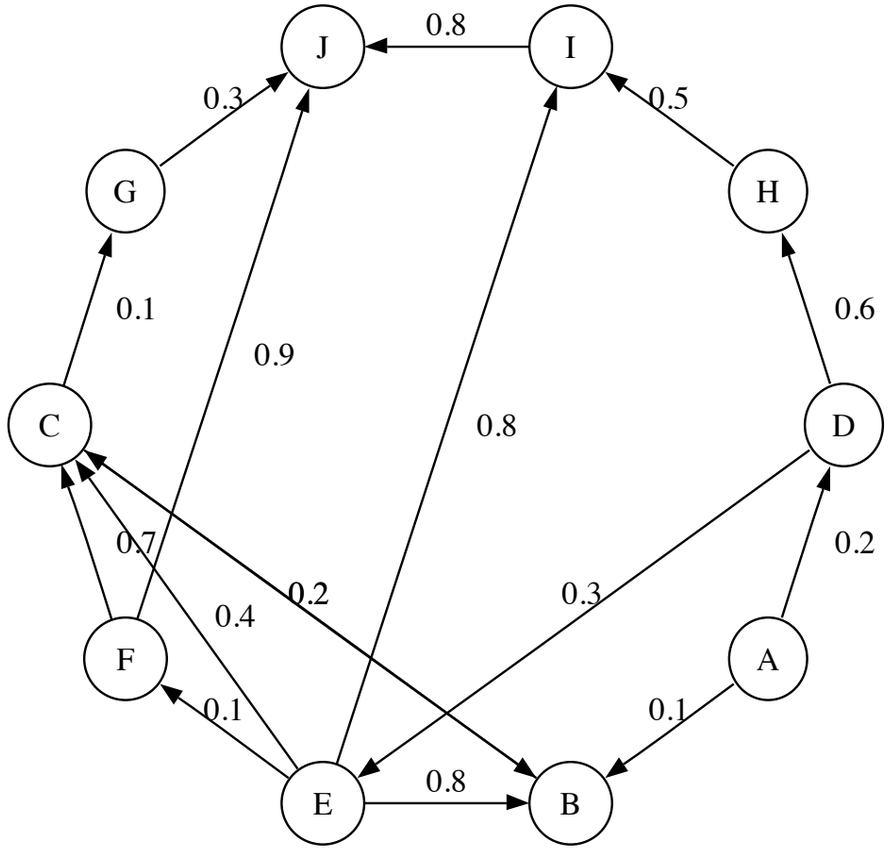
- Consider the use of a joint user-query and query-URL bipartite graphs for query suggestion

Level 2

- Use matrix factorization for learning query features in constructing the Query Similarity Graph
- Use heat diffusion for similarity propagation for query suggestions

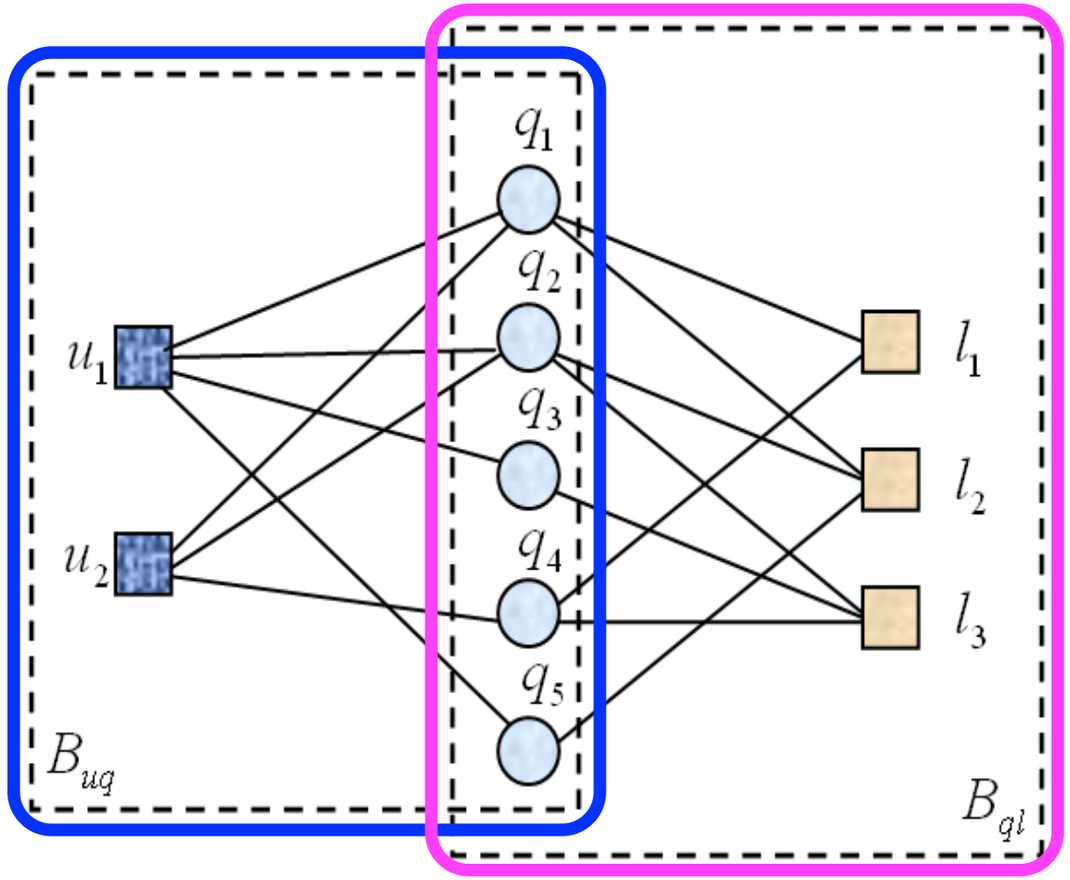


Bipartite Graphs



Query Similarity Graph

- Queries are issued by the users, and which URLs to click are also decided by the users
- Two distinct users are similar if they issued similar queries
- Two queries are similar if they are issued by similar users



r^*_{ij} Normalized weight, how many times u_i issued q_j

s^*_{jk} Normalized weight, how many times q_j is linked to l_k

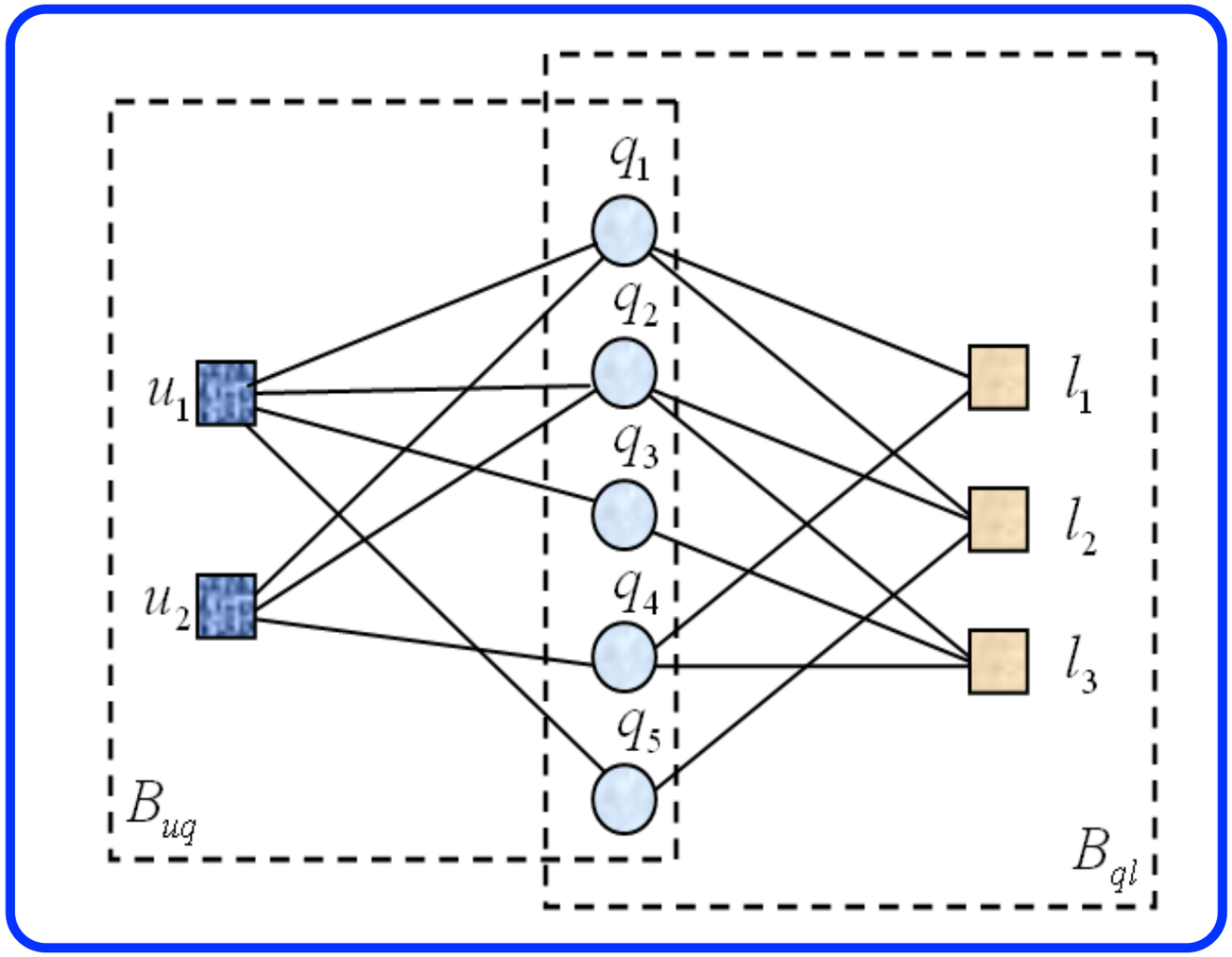
U_i L-dimensional vector of user u_i

Q_j L-dimensional vector of query q_j

L_k L-dimensional vector of URL l_k

$$\mathcal{H}(R,U,Q) = \min_{U,Q} \frac{1}{2} \sum_{i=1}^{m} \sum_{j=1}^{n} I_{ij}^{R} (r_{ij}^{*} - g(U_i^T Q_j))^2 + \frac{\alpha_u}{2} \|U\|_F^2 + \frac{\alpha_q}{2} \|Q\|_F^2$$

$$\mathcal{H}(S,Q,L) = \min_{Q,L} \frac{1}{2} \sum_{j=1}^{n} \sum_{k=1}^{p} I_{jk}^{S} (s_{jk}^{*} - g(Q_j^T L_k))^2 + \frac{\alpha_q}{2} \|Q\|_F^2 + \frac{\alpha_l}{2} \|L\|_F^2$$



$$\mathcal{H}(S,R,U,Q,L) =$$
$$\frac{1}{2}\sum_{j=1}^{n}\sum_{k=1}^{p} I_{jk}^{S}(s_{jk}^{*}-g(Q_j^T L_k))^2 + \frac{\alpha_r}{2}\sum_{i=1}^{m}\sum_{j=1}^{n} I_{ij}^{R}(r_{ij}^{*}-g(U_i^T Q_j))^2$$
$$+\frac{\alpha_u}{2}\|U\|_F^2 + \frac{\alpha_q}{2}\|Q\|_F^2 + \frac{\alpha_l}{2}\|L\|_F^2,$$

- A local minimum can be found by performing gradient descent in U_i, Q_j and L_k

Gradient Descent Equations

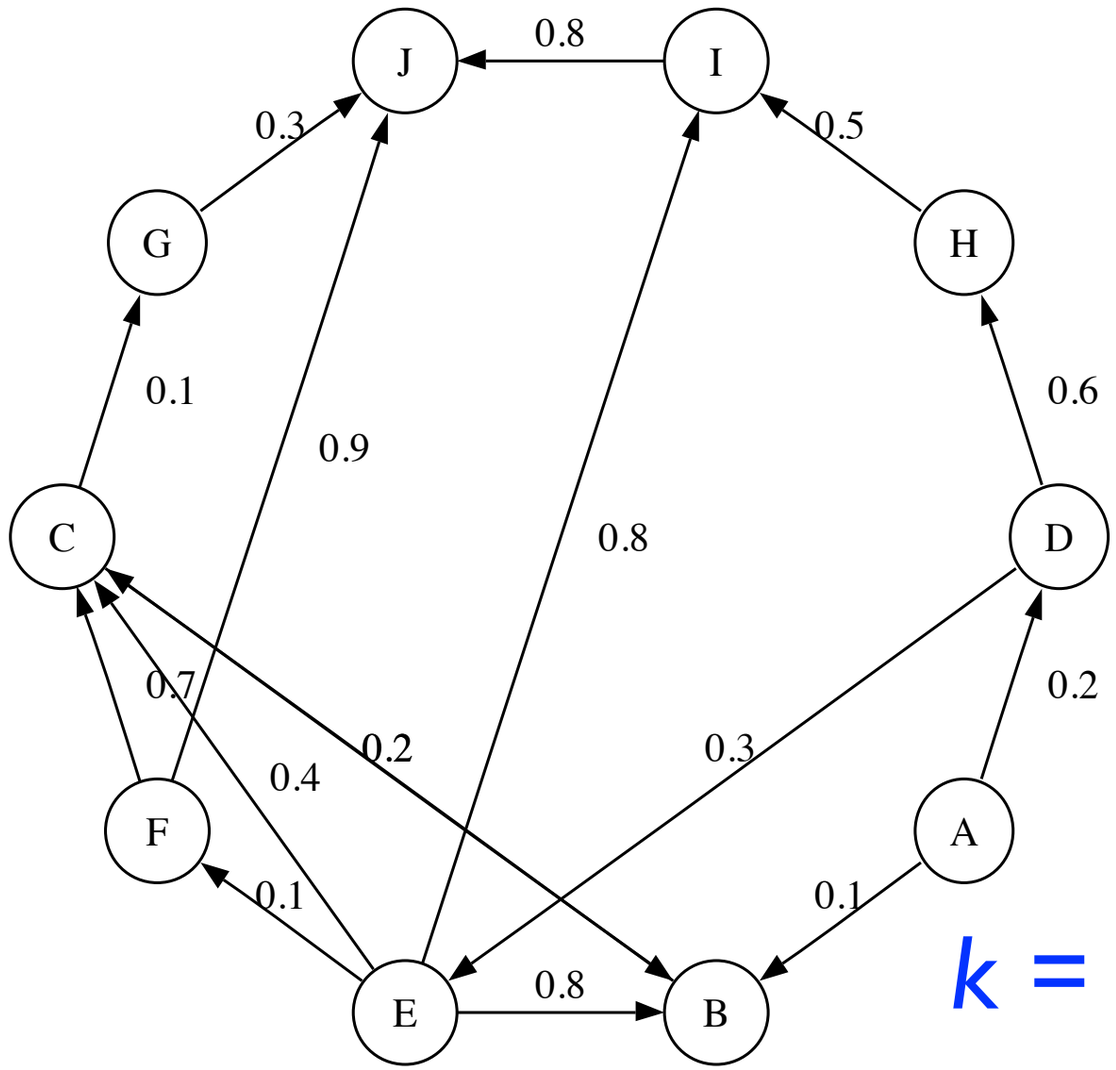
$$\frac{\partial \mathcal{H}}{\partial U_i} = \alpha_r \sum_{j=1}^{n} I_{ij}^R g'(U_i^T Q_j)(g(U_i^T Q_j) - r_{ij}^*)Q_j + \alpha_u U_i,$$

$$\frac{\partial \mathcal{H}}{\partial Q_j} = \sum_{k=1}^{p} I_{jk}^S g'(Q_j^T L_k)(g(Q_j^T L_k) - s_{jk}^*)L_k$$
$$+ \alpha_r \sum_{i=1}^{m} I_{ij}^R g'(U_i^T Q_j)(g(U_i^T Q_j) - r_{ij}^*)U_i + \alpha_q Q_j,$$

$$\frac{\partial \mathcal{H}}{\partial L_k} = \sum_{j=1}^{n} I_{jk}^S g'(Q_j^T L_k)(g(Q_j^T L_k) - s_{jk}^*)Q_j + \alpha_l L_k,$$

Only the Q matrix, the queries' latent features,
is being used to generate the query similarity graph!

Query Similarity Graph



- Similarities are calculated using queries' latent features
- Only the top-*k* similar neighbors (terms) are kept

Similarity Propagation

- Based on the Heat Diffusion Model
- In the query graph, given the heat sources and the initial heat values, start the heat diffusion process and perform *P* steps
- Return the Top-*N* queries in terms of highest heat values for query suggestions

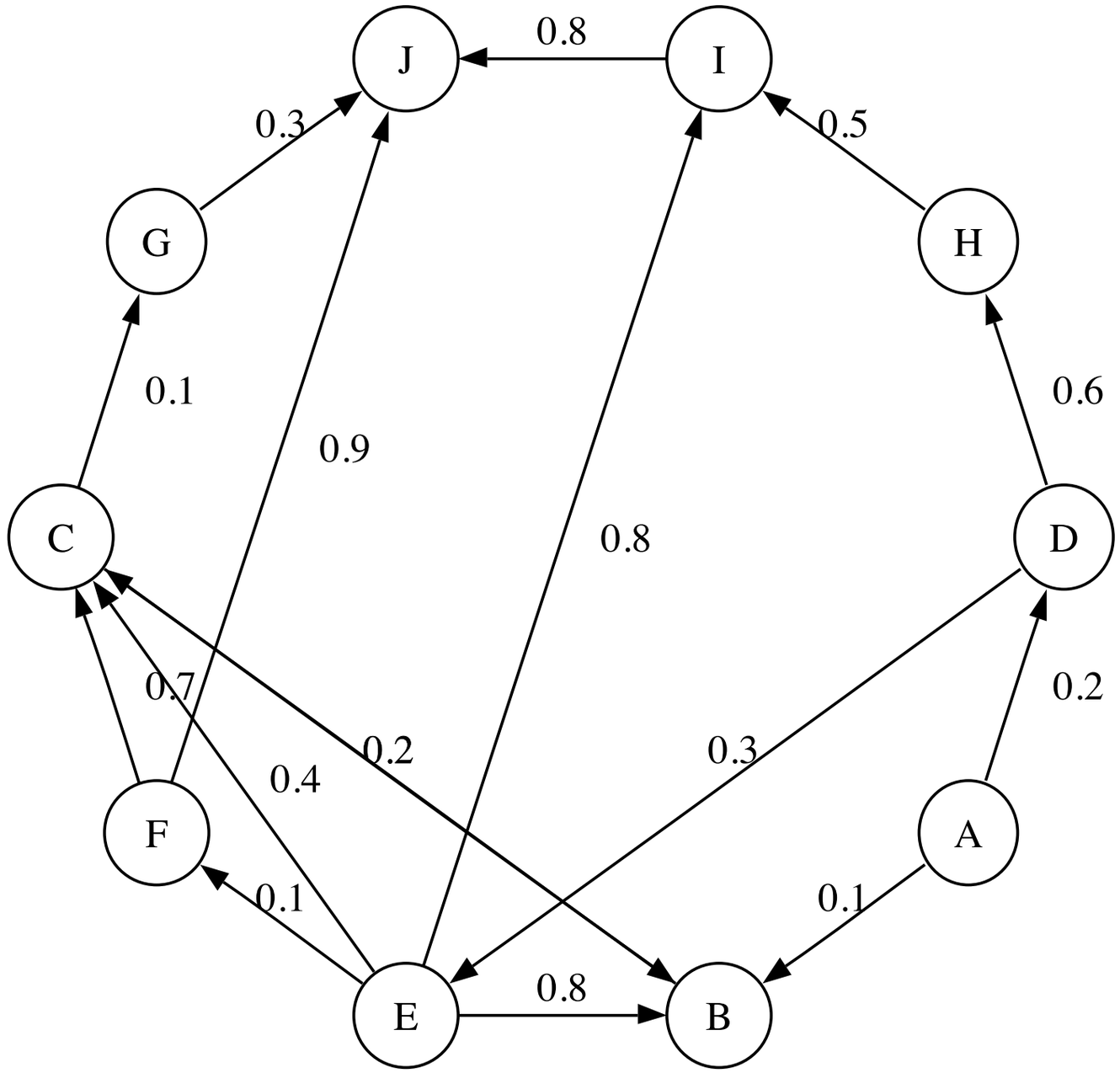
Heat Diffusion Model

- Heat diffusion is a physical phenomena
- Heat flows from high temperature to low temperature in a medium
- Heat kernel is used to describe the amount of heat that one point receives from another point
- The way that heat diffuse varies when the underlying geometry varies

$$\rho C_P \frac{\partial T}{\partial t} = Q + \nabla \cdot (k \nabla T)$$

ρ	Density
C_P	Heat capacity and constant pressure
$\frac{\partial T}{\partial t}$	Change in temperature over time
Q	Heat added
k	Thermal conductivity
∇T	Temperature gradient
$\nabla \cdot \mathbf{v}$	Divergence

Heat Diffusion Process



Similarity Propagation Model

$$\frac{f_i(t+\Delta t) - f_i(t)}{\Delta t} = \alpha \left(-\frac{\tau_i}{d_i} f_i(t) \sum_{k:(q_i,q_k)\in E} w_{ik} + \sum_{j:(q_j,q_i)\in E} \frac{w_{ji}}{d_j} f_j(t) \right) \quad (1)$$

$$\mathbf{f}(1) = e^{\alpha \mathbf{H}} \mathbf{f}(0) \quad (2)$$

$$H_{ij} = \begin{cases} w_{ji}/d_j, & (q_j, q_i) \in E, \\ -(\tau_i/d_i) \sum_{k:(i,k)\in E} w_{ik}, & i = j, \\ 0, & \text{otherwise.} \end{cases} \quad (3)$$

$$\mathbf{f}(1) = e^{\alpha \mathbf{R}} \mathbf{f}(0), \quad \mathbf{R} = \gamma \mathbf{H} + (1-\gamma)\mathbf{g}\mathbf{1}^T \quad (4)$$

α	Thermal conductivity
d_i	Heat value of node i at time t
$f_i(t)$	Heat value of node i at time t
w_{ik}	Weight between node i and node k
$\mathbf{f}(0)$	Vector of the initial heat distribution
$\mathbf{f}(1)$	Vector of the heat distribution at time 1
τ_i	Equal to 1 if node i has outlinks, else equal to 0
γ	Random jump parameter, and set to 0.85
$\mathbf{g}$	Uniform stochastic distribution vector

Discrete Approximation

- Compute $e^{\alpha \mathbf{R}}$ is time consuming
- We use the discrete approximation to substitute

$$\mathbf{f}(1) = \left(\mathbf{I} + \frac{\alpha}{P}\mathbf{R}\right)^P \mathbf{f}(0)$$

- For every heat source, only diffuse heat to its neighbors within *P* steps
- In our experiments, *P* = 3 already generates fairly good results

Query Suggestion Procedure

- For a given query *q*

1. Select a set of *n* queries, each of which contains at least one word in common with *q*, as heat sources

2. Calculate the initial heat values by

$$f_{\hat{q}_i}(0) = \frac{|\mathcal{W}(q) \cap \mathcal{W}(\hat{q}_i)|}{|\mathcal{W}(q) \cup \mathcal{W}(\hat{q}_i)|}$$

q = "Sony"
"Sony" = 1
"Sony Electronics" = 1/2
"Sony Vaio Laptop" = 1/3

3. Use $\mathbf{f}(1) = e^{\alpha \mathbf{R}} \mathbf{f}(0)$ to diffuse the heat in graph

4. Obtain the Top-*N* queries from $\mathbf{f}(1)$

Physical Meaning of α

- If set α to a large value
  - The results depend more on the query graph, and more semantically related to original queries, e.g., travel => lowest air fare
- If set α to a small value
  - The results depend more on the initial heat distributions, and more literally similar to original queries, e.g., travel => travel insurance

Experimental Dataset

Data Source	Clickthrough data from AOL search	After Pre-Processing
Collection Period	March 2006 to May 2006 (3 months)	
Lines of Logs	19,442,629	
Unique user IDS	657,426	192,371
Unique queries	4,802,520	224,165
Unique URLs	1,606,326	343,302
Unique words		69,937

Pre-processing

- Computer set-up
  Intel Pentium D CPU, 3.0 Gz, Dual Core with 1G memory
- Keep valid words which contains only ‘a’, ‘b’,…, ‘z’ and spaces
- Remove those queries which appear less than three times

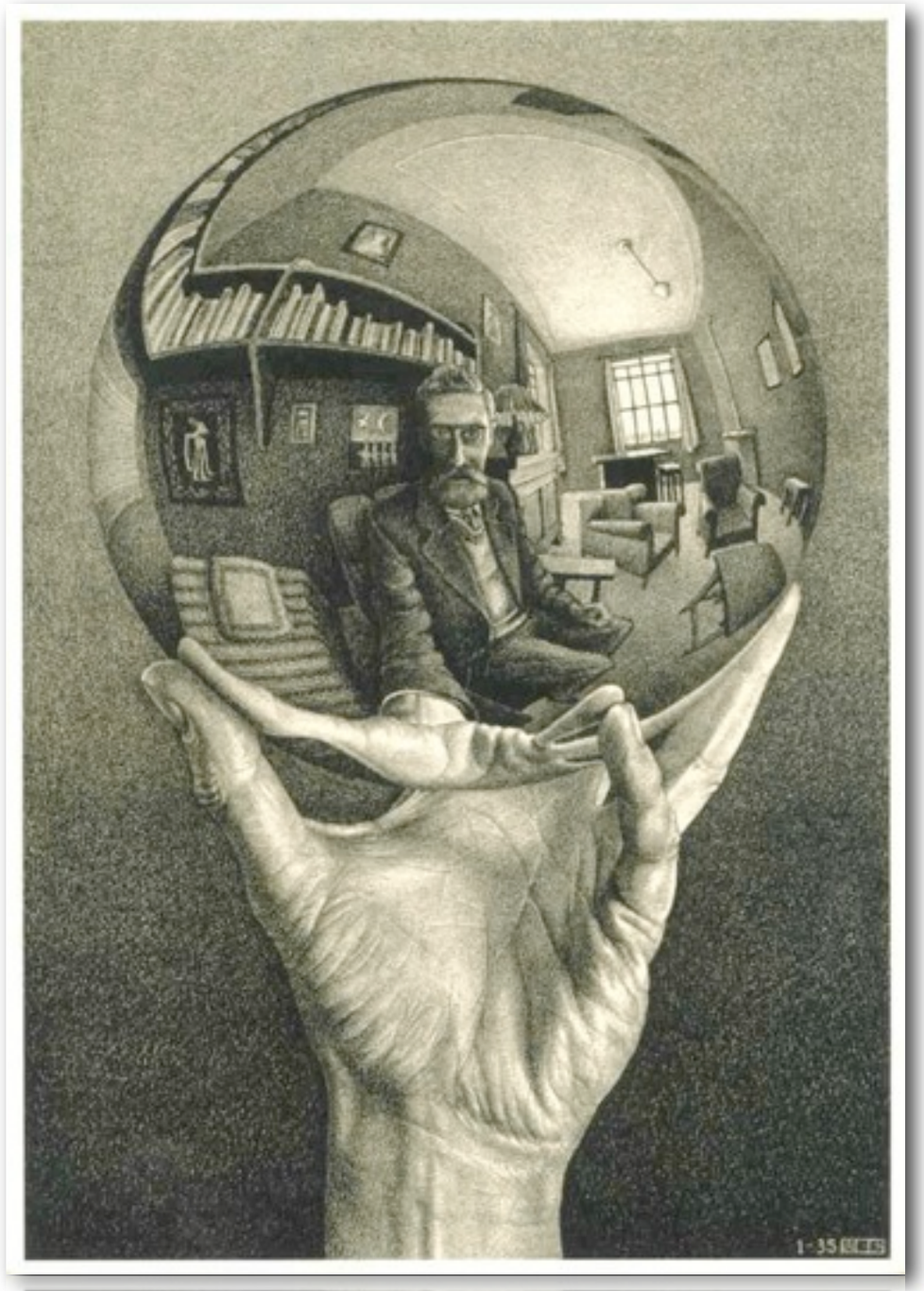
Query Suggestions

Table 2: Examples of LSQS Query Suggestion Results ($k = 50$)

Testing Queries	Suggestions				
	$\alpha = 10$			$\alpha = 1000$	
	Top 1	Top 2	Top 3	Top 4	Top 5
michael jordan	michael jordan shoes	michael jordan bio	pictures of michael jordan	nba playoff	nba standings
travel	travel insurance	abc travel	travel companions	hotel tickets	lowest air fare
java	sun java	java script	java search	sun microsystems inc	virtual machine
global services	ibm global services	global technical services	staffing services	temporary agency	manpower professional
walt disney land	world of disney	disney world orlando	disney world theme park	disneyland grand hotel	disneyland in california
intel	intel vs amd	amd vs intel	pentium d	pentium	centrino
job hunt	jobs in maryland	monster job	jobs in mississippi	work from home online	monster board
photography	photography classes	portrait photography	wedding photography	adobe elements	canon lens
internet explorer	ms internet explorer	internet explorer repair	internet explorer upgrade	microsoft com	security update
fitness	fitness magazine	lifestyles family fitness	fitness connection	womens health magazine	family fitness
m schumacher	schumacher	red bull racing	formula one racing	ferrari cars	formula one
solar system	solar system project	solar system facts	solar system planets	planet jupiter	mars facts
sunglasses	replica sunglasses	cheap sunglasses	discount sunglasses	safilo	marhon
search engine	audio search engine	best search engine	search engine optimization	song lyrics search	search by google
disease	grovers disease	liver disease	morgellons disease	colic in babies	oklahoma vital records
pizzahut	pizza hut menu	pizza coupons	pizza hut coupons	papa johns pizza coupon	papa johns
health care	health care proxy	universal health care	free health care	great west healthcare	uhc
flower delivery	global flower delivery	online florist	flowers online	send flowers	virtual flower
wedding	wedding guide	wedding reception ideas	wedding decoration	unity candle	centerpiece ideas
astronomy	astronomy magazine	astronomy pic of the day	star charts	space pictures	comet

Emerging Issues

- Theory and models
- Search, mining, and ranking of existing information, e.g., spatial (relations) and temporal (time) domains
- Dealing with partial and incomplete information, e.g., collaborative filtering, ranking, tagging, etc.
- Scalability and algorithmic issues
- Security, privacy, trust, and risk issues
- Monetization of social interactions
- Software platforms and development tools



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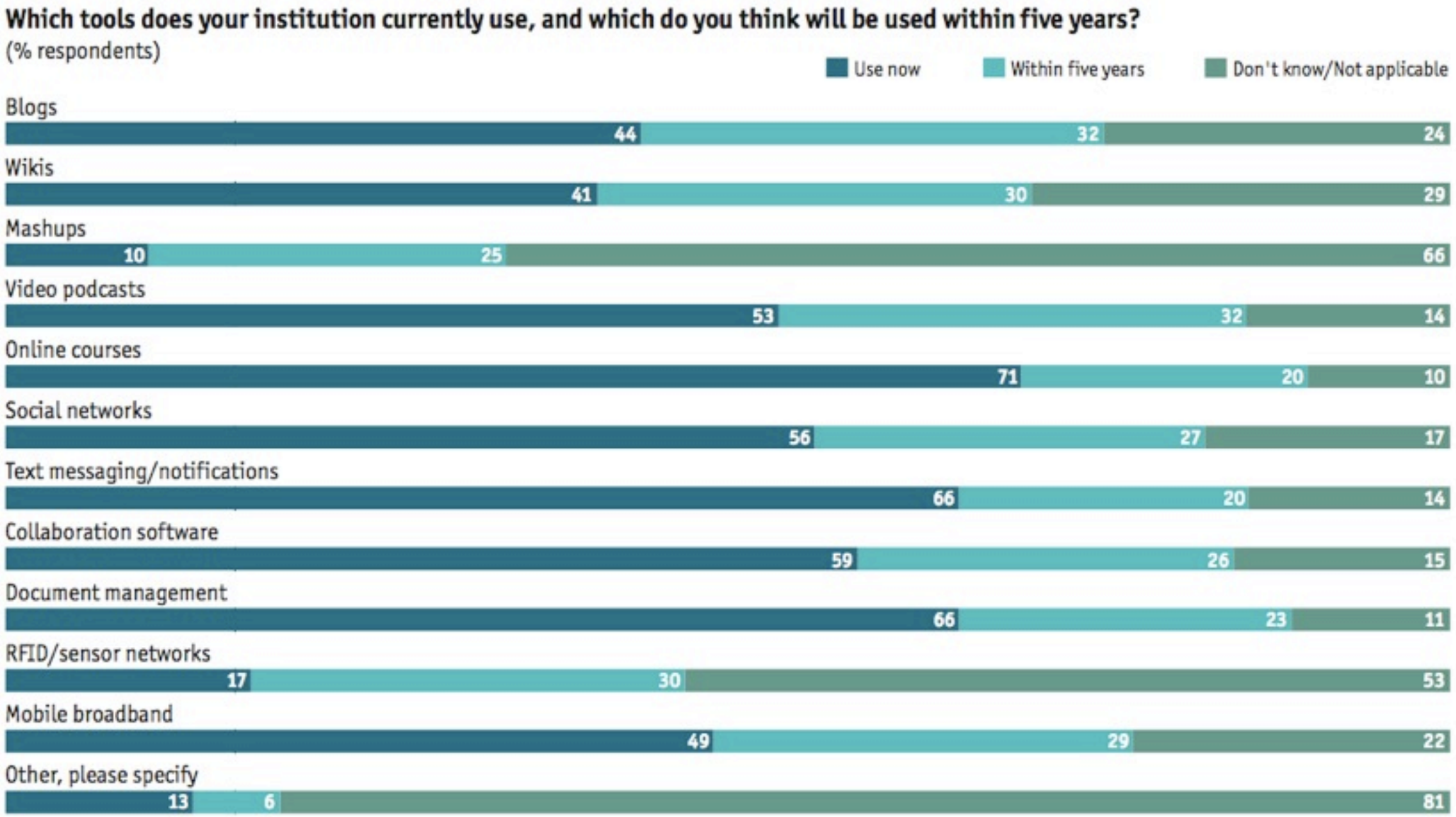

Concluding Remarks

- The Era of Social Computing is here to stay!
- Relations are important!
- Discovering new paradigms by blending different social media and interactions
- Be concerned about computational techniques to search, rank, and mine data and information to achieve collective intelligence/wisdom

Acknowledgments

- Prof. Michael Lyu
- Mr. Patrick Lau
- Mr. Lam Cho Fung
- Mr. Simon Mok
- Mr. Ivan Yau
- Ms. Sara Fok
- Hongbo Deng (Ph.D.)
- Baichuan Li (M.Phil.)
- Zhenjiang Lin (Ph.D.)
- Hao Ma (Ph.D.)
- Mingzhe Mo (M.Phil.)
- Dingyan Wang (M.Phil.)
- Wei Wang (M.Phil.)
- Haiqin Yang (Ph.D.)
- Connie Yuen (Ph.D.)
- Xin Xin (Ph.D.)
- Chao Zhou (Ph.D.)
- Yi Zhu (Ph.D.)

On-Going Research

Machine Learning

- Heavy-Tailed Symmetric Stochastic Neighbor Embedding (NIPS'09)
- Adaptive Regularization for Transductive Support Vector Machine (NIPS'09)
- Direct Zero-norm Optimization for Feature Selection (ICDM'08)
- Semi-supervised Learning from General Unlabeled Data (ICDM'08)
- Learning with Consistency between Inductive Functions and Kernels (NIPS'08)
- An Extended Level Method for Efficient Multiple Kernel Learning (NIPS'08)
- Semi-supervised Text Categorization by Active Search (CIKM'08)
- Transductive Support Vector Machine (NIPS'07)
- Global and local learning (ICML'04, JMLR'04)

On-Going Research

Web Intelligence/Information Retrieval

- A Generalized Co-HITS Algorithm and Its Application to Bipartite Graphs (KDD'09)
- Entropy-biased Models for Query Representation on the Click Graph (SIGIR'09)
- Effective Latent Space Graph-based Re-ranking Model with Global Consistency (WSDM'09)
- Formal Models for Expert Finding on DBLP Bibliography Data (ICDM'08)
- Learning Latent Semantic Relations from Query Logs for Query Suggestion (CIKM'08)
- RATE: a Review of Reviewers in a Manuscript Review Process (WI'08)
- MatchSim: link-based web page similarity measurements (WI'07)
- Diffusion rank: Ranking web pages based on heat diffusion equations (SIGIR'07)
- Web text classification (WWW'07)

On-Going Research

Recommender Systems/Collaborative Filtering

- Learning to Recommend with Social Trust Ensemble (SIRIR'09)
- Semi-Nonnegative Matrix Factorization with Global Statistical Consistency in Collaborative Filtering (CIKM'09)
- Recommender system: accurate recommendation based on sparse matrix (SIGIR'07)
- SoRec: Social Recommendation Using Probabilistic Matrix Factorization (CIKM'08)

Human Computation

- A Survey of Human Computation Systems (SCA'09)
- Mathematical Modeling of Social Games (SIAG'09)
- An Analytical Study of Puzzle Selection Strategies for the ESP Game (WI'08)
- An Analytical Approach to Optimizing The Utility of ESP Games (WI'08)

Workshop on Social Computing in Education 2009

Home

New since last time: 1 file

http://groups.google.com/group/WSCE2009

Call for Papers

Workshop on Social Computing in Education (WSCE2009)
in conjunction with SocialComp-09, August 29-31, 2009, Vancouver, Canada

Welcome to the workshop on Social Computing in Education (SCE2009). The workshop is held in conjunction with the SocialComp-09, Vancouver, Canada from August 29-31, 2009.

With the advent of Web 2.0 and related technologies, Social Computing has become a new paradigm in ways we communicate, learn, and educate. Social platforms such as wikis, blogs, twitters, forums, groups, podcasts, mashups, virtual worlds, and sites for social networking, recommender systems, social bookmarking, social news, knowledge sharing, etc. are generating novel ways we acquire, access, manipulate, process, retrieve, present, and visualize information in the teaching and learning space. The social media for education has become dynamic, ubiquitous, distributed, real-time, collaborative, bottom-up, many-to-many, value-based, and personalized. This workshop solicits contributions on using Social Computing and related technologies for education, the emerging applications of Web 2.0 as an educational platform, as well as privacy, risk, security, and policy issues associated in Social Computing for Education 2.0.

King · Baeza-Yates (Eds.)

Weaving Services and People on the World Wide Web

Ever since its inception, the Web has changed the landscape of human experiences on how we interact with one another and data through service infrastructures via various computing devices. This interweaving environment is now becoming ever more embedded into devices and systems that integrate seamlessly on how we live, both in our working or leisure time.

For this volume, King and Baeza-Yates selected some pioneering and cutting-edge research work that is pointing to the future of the Web. Based on the Workshop Track of the 17th International World Wide Web Conference (WWW2008) in Beijing, they selected the top contributions and asked the authors to resubmit their work with a minimum of one third of additional material from their original workshop manuscripts to be considered for this volume. After a second-round of reviews and selection, 16 contributions were finally accepted.

The work within this volume represents the tip of an iceberg of the many exciting advancements on the WWW. It covers topics like semantic web services, location-based and mobile applications, personalized and context-dependent user interfaces, social networks, and folksonomies. The presentations aim at researchers in academia and industry by showcasing latest research findings. Overall they deliver an excellent picture of the current state-of-the-art, and will also serve as the basis for ongoing research discussions and point to new directions.

ISBN 978-3-642-00569-5

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Weaving Services and People on the World Wide Web

Irwin King
Ricardo Baeza-Yates (Eds.)

Weaving Services and People on the World Wide Web

Springer

Computational Approaches in Social Computing, Irwin King, ICONIP2009, December 3, 2009, Bangkok, Thailand

Economist Intelligent Unit 2008

In what ways do new technologies pose the greatest challenges and risks to colleges and universities? Select up to three.
(% of respondents)

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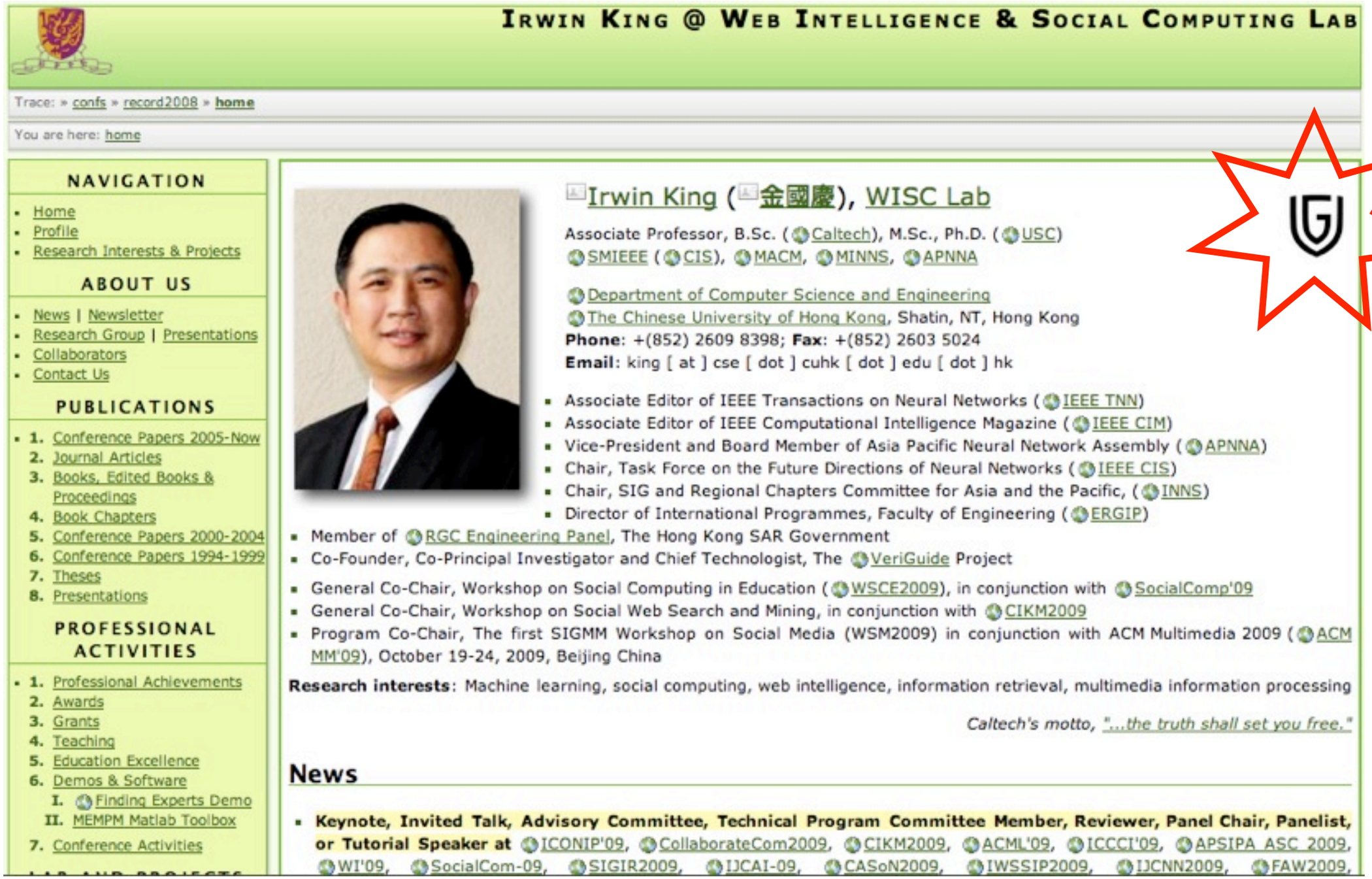

http://www.cse.cuhk.edu.hk/~king

The Era of Social Computing, Irwin King, The Future Generation Information Technology (FGIT2009), December 11, 2009, Jeju Island, Korea

Q & A