

Computer-mediated Collective Action

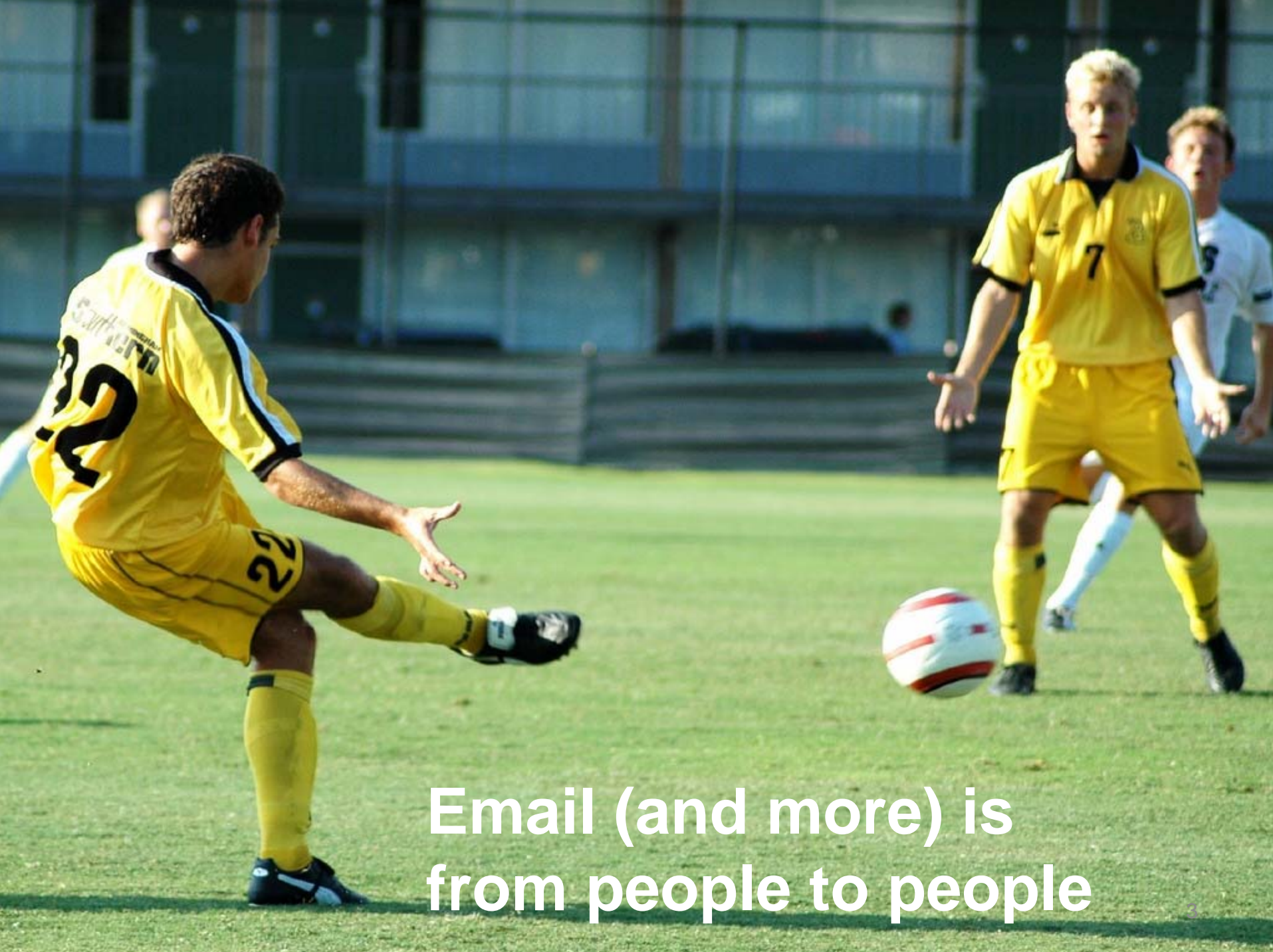
Marc Smith
(masmith@microsoft.com)
Microsoft Research

Copyright: Smith

DLAC June 2008, Tübingen

What makes social media social?

- Who makes it?
- Who consumes it?
- Who owns it?/Who profits from it?
- Who or what makes it successful?
- How to harness the swarm?
- How to map and understand its dynamics?
 - How do people and groups vary?
 - Who links to whom?
- What is next for social media?



Email (and more) is
from people to people



**Patterns are left
behind**

What is social media?

Clay Shirky says it is:

"stuff that gets spammed"

What is social media?

Danyel Fisher says it is:

“made out of people.”

<http://danyelf.spaces.live.com/>

TIME

PERSON OF THE YEAR



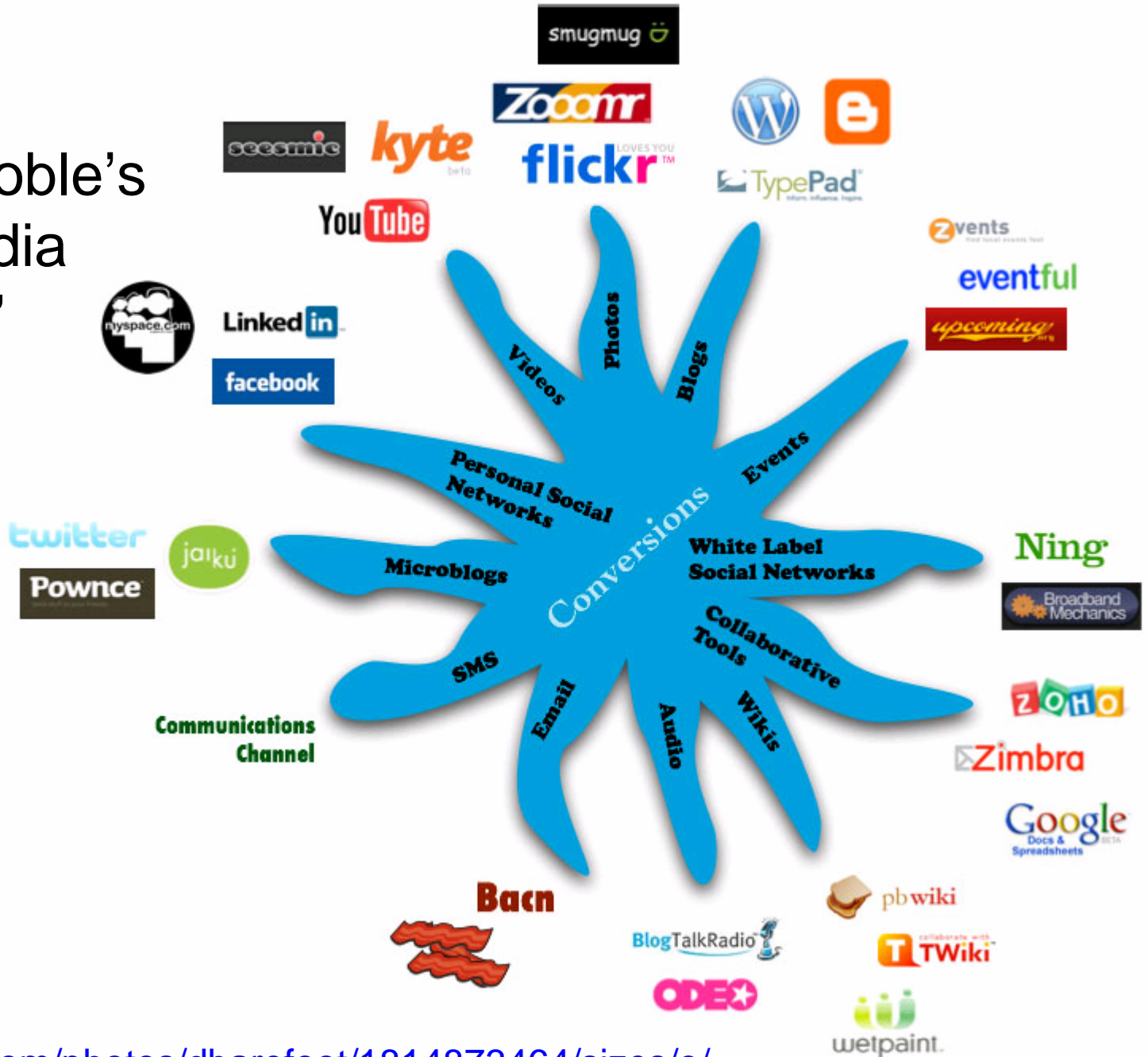
Yes, youse.
You control the Information Age.
Welcome to your world.

Social cyberspaces are created by many kinds of network interaction media:

Email, Email lists,
Chat, Buddy Lists/Instant Messenger,
Usenet, Web Boards, Forums,
Ebay,
Blogs, Microblogs, Wikis,
MUDs, MOOs,
Graphical Worlds, MMORPGs,
Napster, Kazaa, Gnutella, Bittorrent
Photo streams, Tags, Folksonomies,

*MoSoSo*⁸

Robert Scoble's Social Media "Star Fish"



Social Media Ecosystem - Weave



What is social media?

A Sociological Frame:

Collective Goods
produced through
Computer-Mediated
Collective Action

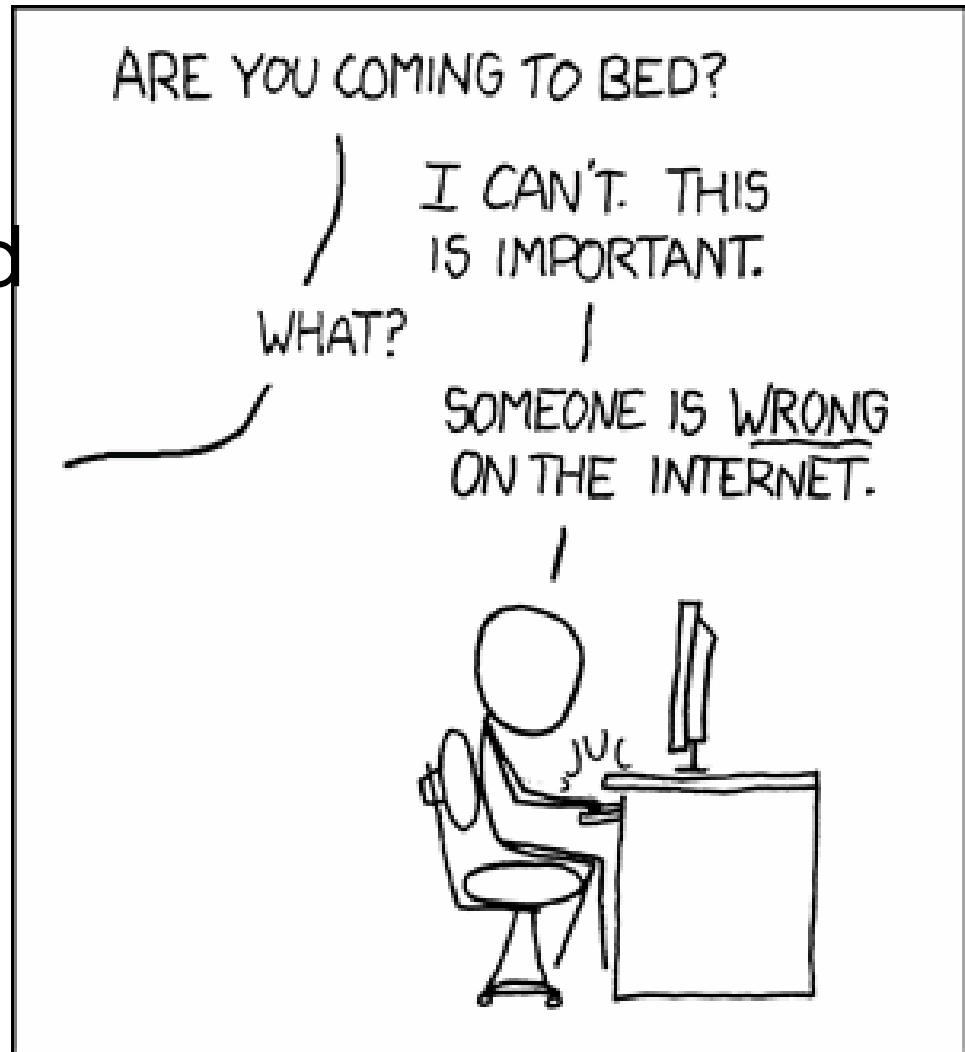
Collective Action Dilemma Theory

- Central tenet
 - Individual rationality leads to collective disaster
- Phenomena of interest
 - Provision and/or sustainable consumption of collective resources
 - Public Goods, Common Property, "Free Rider" Problems, Tragedies
 - Signaling intent
- Methods
 - Surveys, interviews, participant observation, log file analysis, computer modeling

(Axelrod, 1984; Hess, 1995; Kollock & Smith, 1996)

Community-Computer Mediated Collective Action

Motivations for contribution to computer mediated public goods



Source: xkcd, <http://xkcd.com/386/>

Seeing that my pictures
get seen by family and friends



1 comment
5 views

Bats! Bangalore, India



Trickydame - HA! says:

creepy! I hope eli has his stake in case these turn into VAMPIRES!!

Added 2 weeks ago



1 comment
15 views

Christine waits patiently at MSRI



Blurky says:

I love the floor to ceiling white board! But what is that game?

Added 2 weeks ago

Colleague adds better
tags to my photos!



1 comment
10 views

Flower petals afloat



eszter says:

Hah! From the thumbnail I thought this was going to be a bowl of berries or something..)

Added 2 weeks ago

--
Seen in my contacts' photos. (?)



eszter added a tag: [petals](#)

Added 2 weeks ago



eszter added a tag: [red](#)

Added 2 weeks ago

Stranger translates
foreign (to me)
content in my public photos!



1 comment
10 views

Not sure who this is on horseback near Sankey Tank



krinish says:

Shivaji Bhonsle, also known as Chatrapati Shivaji Raje Bhonsle (Marathi: छत्रपती शिवाजी राजे भोसले) was the founder of Maratha empire in western India in 1674.

Added 3 weeks ago

en.wikipedia.org/wiki/Shivaji



2 comments

Smortons in India pose with Elephant



davidsilver says:

excellent.

Added 3 weeks ago



davidsilver says:

Judging from all the smiles, it seems like this trip has

Added 3 weeks ago

Some Dimensions of Social Media

How large are the social groups producing and consuming social media?

How large and interactive are the objects produced and consumed?

What does it mean to own a social media object?

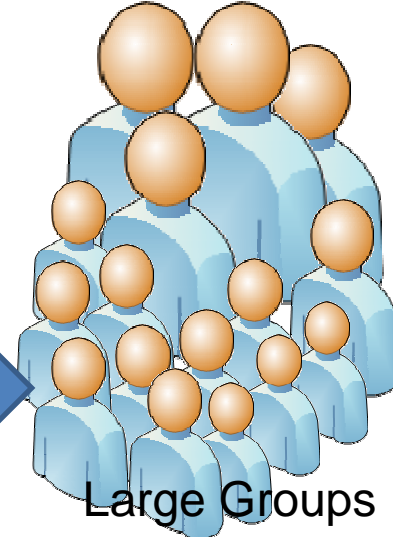
Producers



Individuals



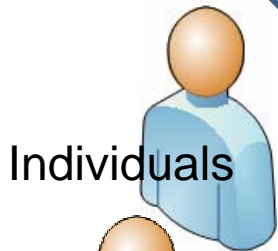
Small Groups



Large Groups

How large are the social groups producing and consuming social media?

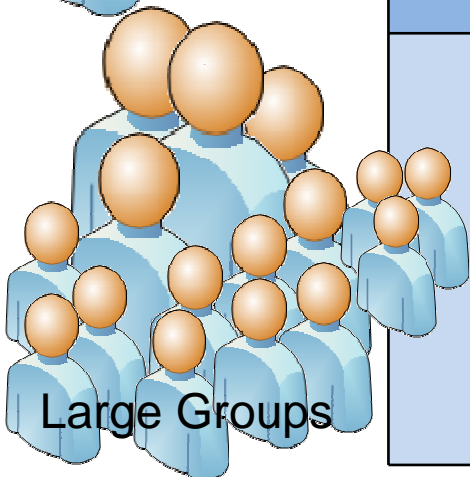
Consumers



Individuals



Small Groups



Large Groups

<p>Dyadic exchanges. Email to named individual(s)</p>	<p>Committee reports to a decision maker/reviewer</p>	<p>Professional services reports for decision makers</p>
<p>Local email list "Social" blogs Personal social network profile page</p>	<p>Multiple authored specialty publications Group blogs. Personal social networks</p>	<p>Professional reports to specialty groups Value added economic data Bloomberg</p>
<p>Messages to discussion groups/web board Sole authored source code Popular blogs Novels</p>	<p>Multiple authored popular media, software Journalism Wikipedia Pages Popular group blogs</p>	<p>Collective search engine users Market behavior Query log optimizations Market analysis</p>

Dimensions of Social Media:

How large are the pieces of social media?

How interactive is the rate of exchange?

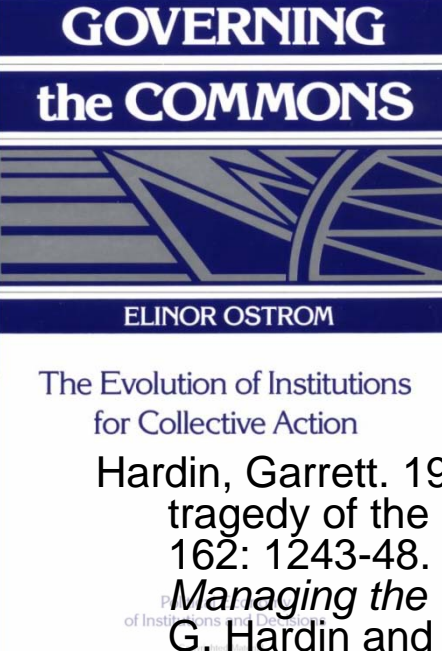
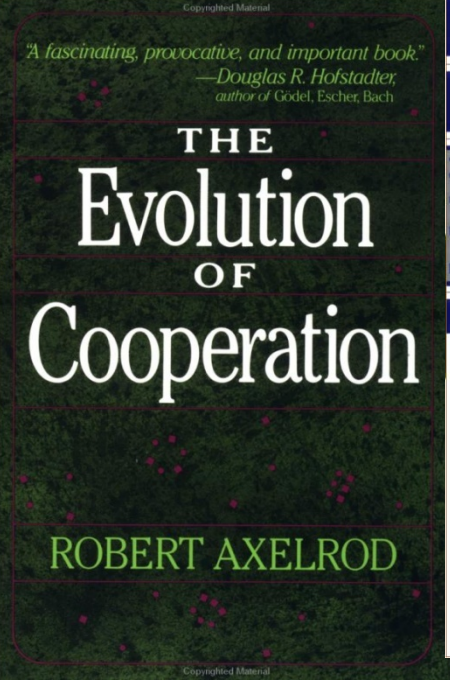
	Digital Object Editing Granularity	Fine (Character/Pixel/Byte)	Medium (Object/Attribute/Track/Player)	Coarse (Document/Message/Blog Post/Photo)
Digital Object Editing Synchronicity		Each user can directly control smallest units of content.	Each user controls medium sized blocks of content that can only indirectly alter or be altered by other user's content in a larger shared data structure.	Each user controls a block of content, rarely edited or modified by others with only associative linkages.
	Synchronous	Real time Shared canvas	Virtual Worlds Multiplayer Games Real-time networked musical jamming	Chat, IM, Twitter
	Asynchronous	Shared docs, images, video, audio Source code Wikipedia	Contribution to collected works (album, anthology, report section, discussion group, photosets and other collections).	Email Blog posts Link sharing Photo sharing Document sharing Turn based games

Types of property rights “What does it mean to <u>own</u> social media content?”
Create?
Copy/Paste?
Edit/Delete?
Limit access?
Revoke access?
Monitor access?
Transfer to new host?
Transfer rights to others?
Commercial exploitation?
Adjoining display rights? (can I put ads near your content when I show it to other people)?
Aggregation and secondary analysis rights?

Who owns social media content?

Author	Group of authors	Recipients	Observers	Host	Public Domain
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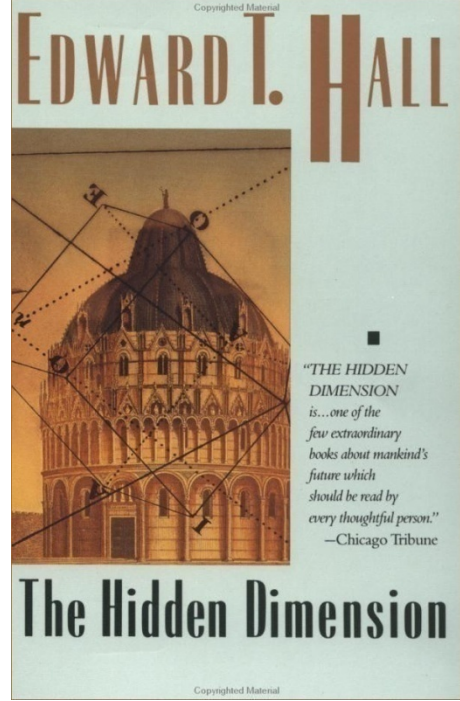
Dimensions of Social Media:
Who can exercise what property rights over social media?



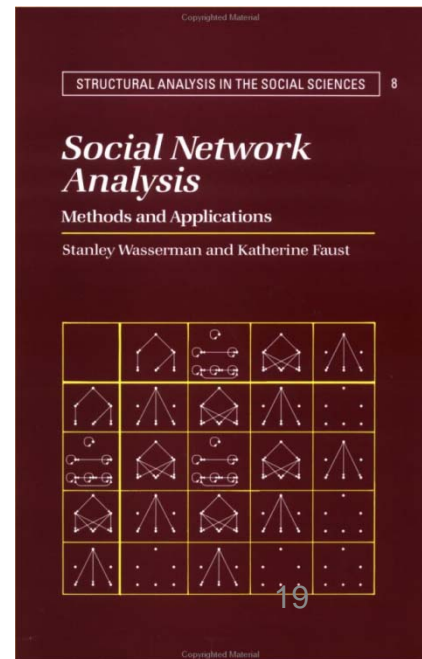
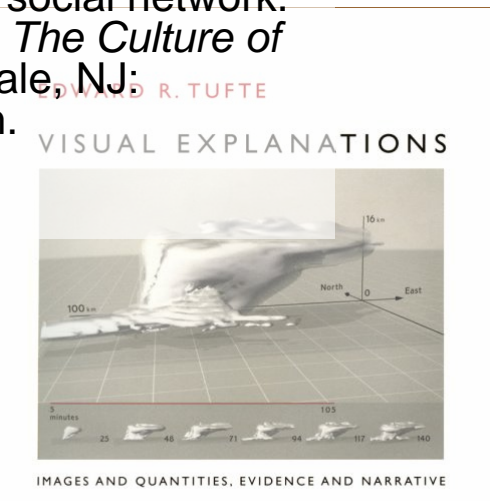
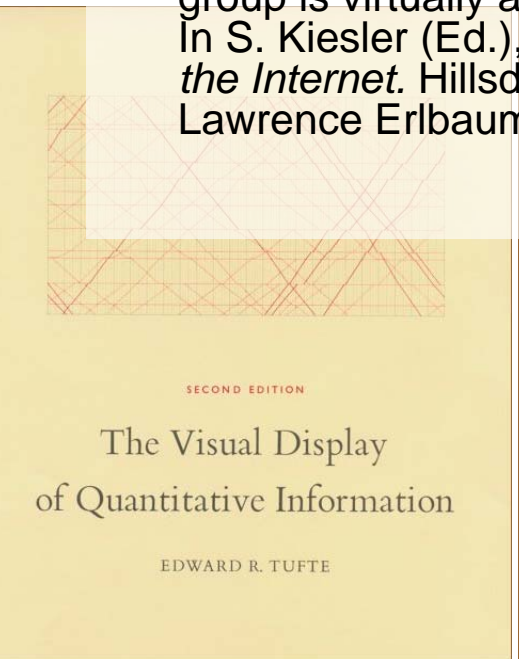
Hardin, Garrett. 1968/1977. "The tragedy of the commons." *Science* 162: 1243-48. Pp. 16-30 in *Managing the Commons*, edited by G. Hardin and J. Baden. San Francisco: Freeman.

Part of Institutions and Processes

"One of the most trenchant contributions to social psychology of this generation." —*American Journal of Sociology*

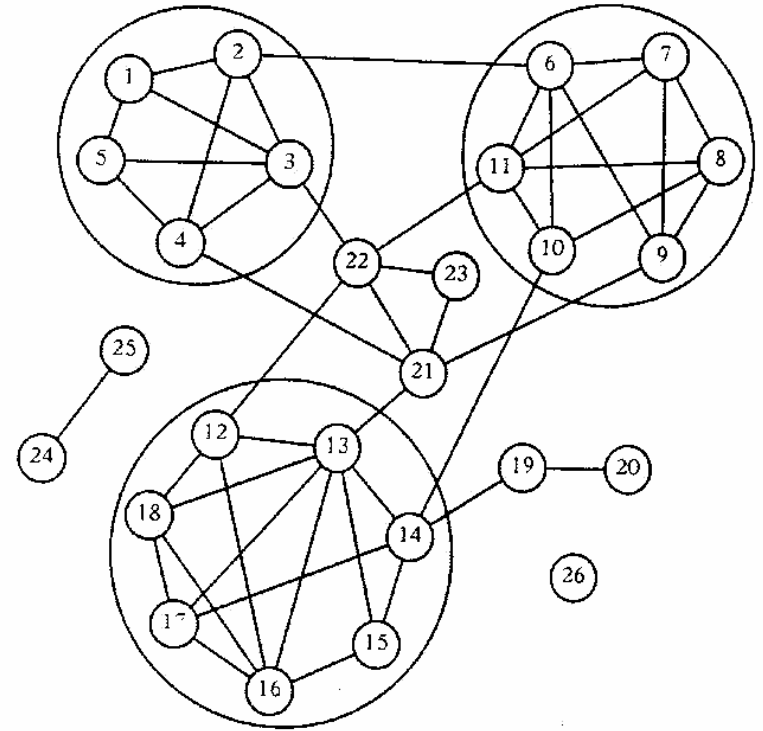


Wellman, Barry. 1997. "An electronic group is virtually a social network." In S. Kiesler (Ed.), *The Culture of the Internet*. Hillsdale, NJ: Lawrence Erlbaum.



Social Network Theory

- Central tenet
 - Social structure emerges from the aggregate of relationships (ties) among members of a population
- Phenomena of interest
 - Emergence of cliques and clusters from patterns of relationships
 - Centrality (core), periphery (isolates), betweenness
- Methods
 - Surveys, interviews, observations, log file analysis, computational analysis of matrices



Source: Richards, W. (1986). The NEGOPY network analysis program. Burnaby, BC: Department of Communication, Simon Fraser University.

pp.7-16

analysis, computational

(Hampton & Wellman, 1999; Paolillo, 2001; Wellman, 2001)

I wish I knew you

I like your picture

You are cool

I was paid to link to you

I want your reflected glory

Everybody else links to
you

I'd vote for you

Can I date
you?

Are you my friend?
We met at a conference and it seemed like the thing to do.

yes

no

I like you

I kind of like you

I really like you

I know you

I feel socially obligated to link to you

I beat you on Xbox
Live

Hi, Mom

I have fake alter egos

Are you my friend?

yes

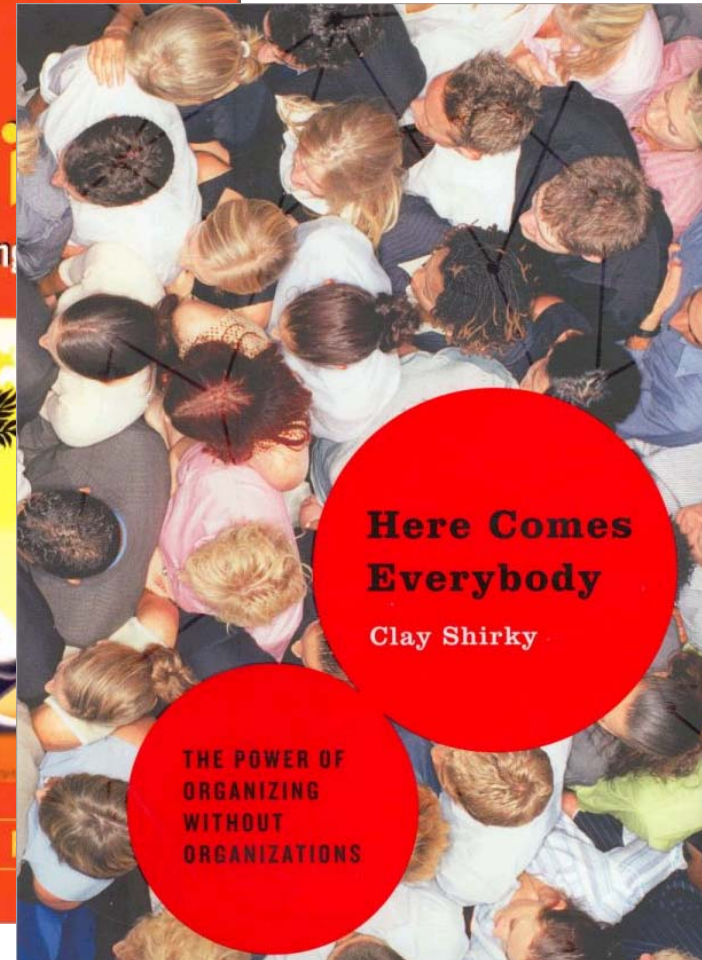
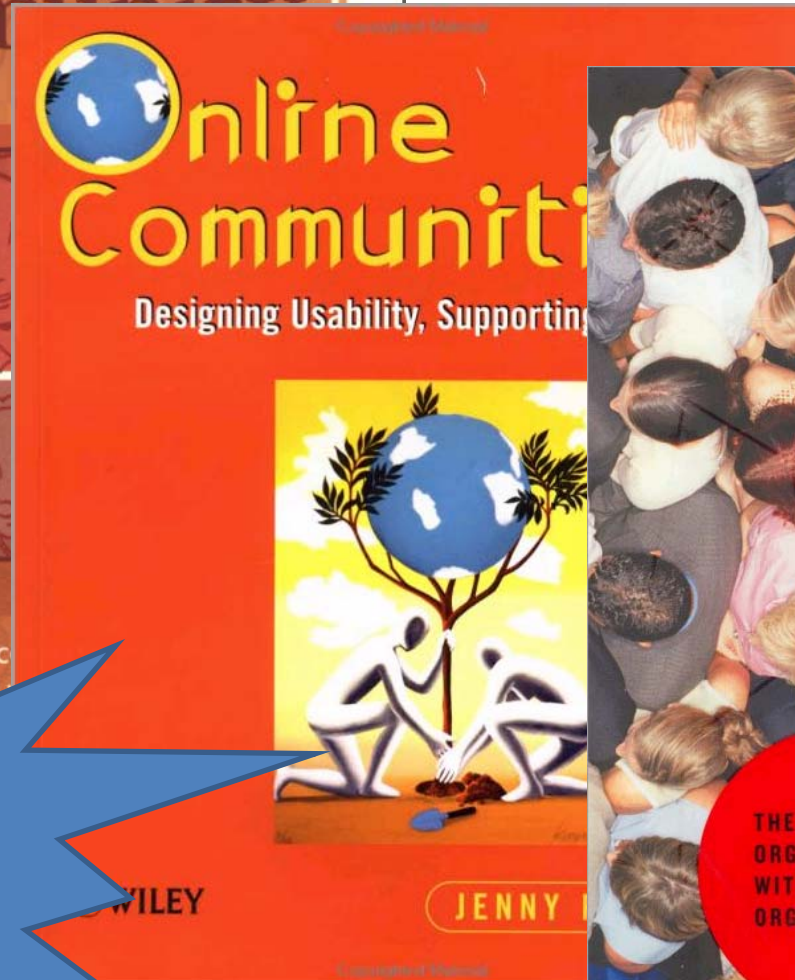
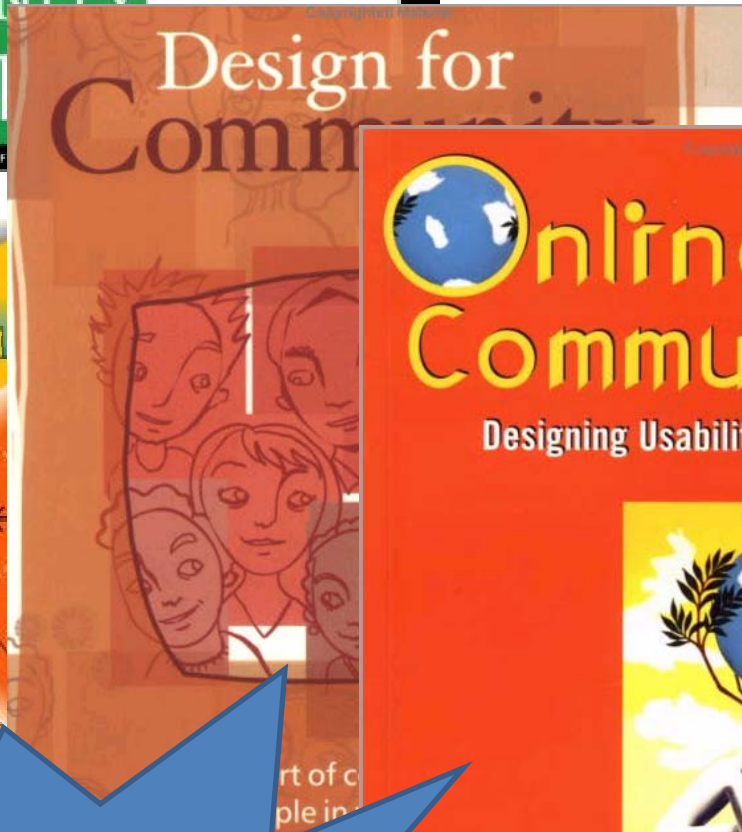
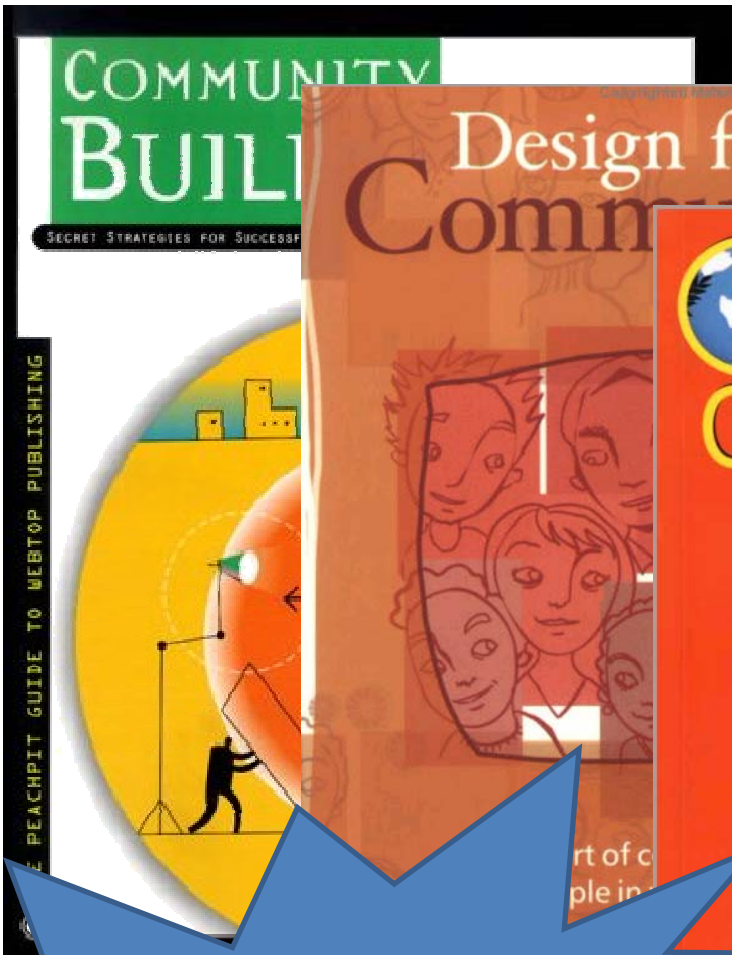
no

Interactionist Sociology

- Central tenet
 - Focus on the active effort of accomplishing interaction
- Phenomena of interest
 - Presentation of self
 - Claims to membership
 - Juggling multiple (conflicting) roles
 - Frontstage/Backstage
 - Strategic interaction
 - Managing one's own and others' "face"
- Methods
 - Ethnography and participant observation

(Goffman, 1959; Hall, 1990)

Literatures of relevance



**Here Comes
Everybody**

Clay Shirky

THE POWER OF
ORGANIZING
WITHOUT
ORGANIZATIONS

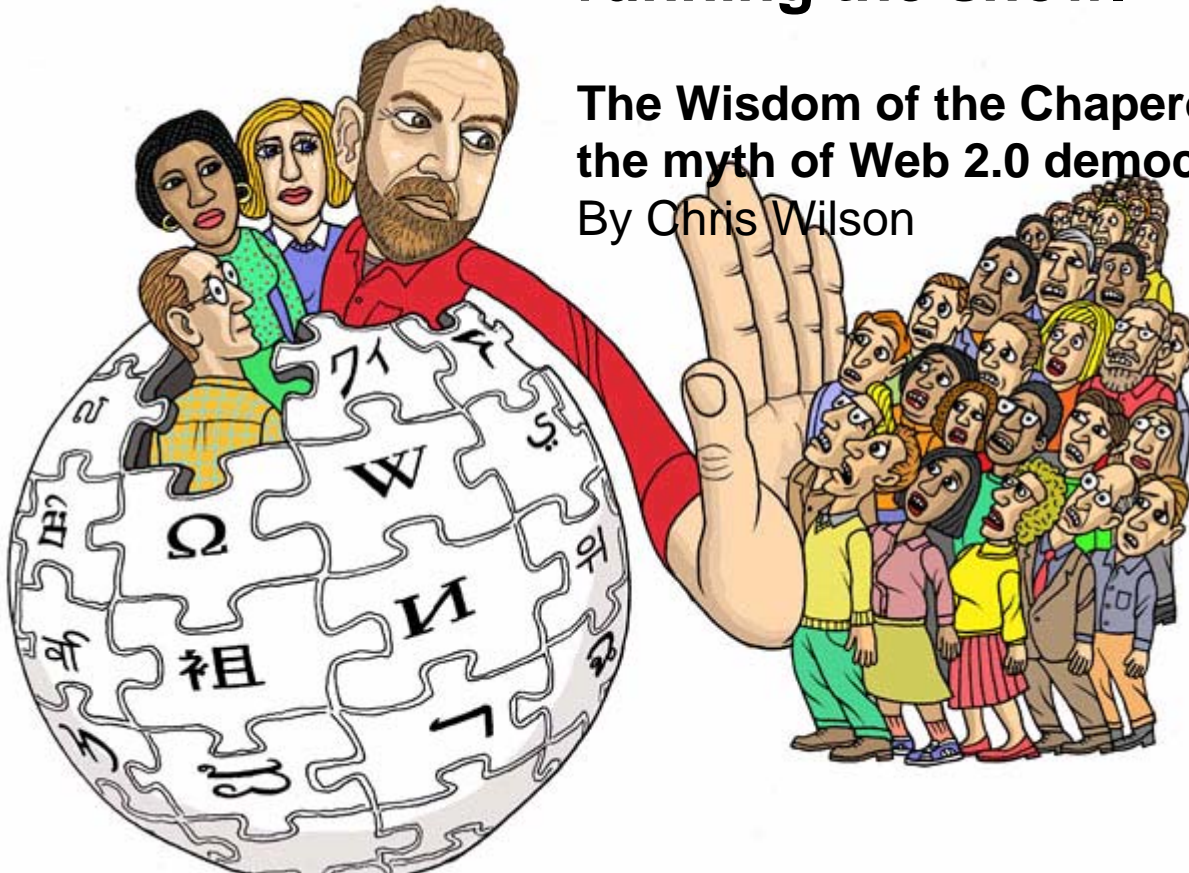
“Space Planning for
Online Community”
ICWSM 2008
Fisher, Turner, Smith

“Social-media sites like [Wikipedia](#) and [Digg](#) are celebrated as shining examples of *Web democracy*, places built by millions of Web users who all act as writers, editors, and voters.

In reality, a small number of people are running the show.”

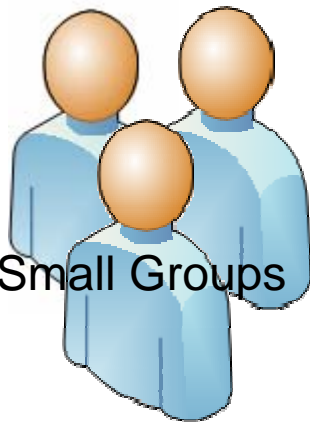
The Wisdom of the Chaperones: Digg, Wikipedia, and the myth of Web 2.0 democracy.

By Chris Wilson

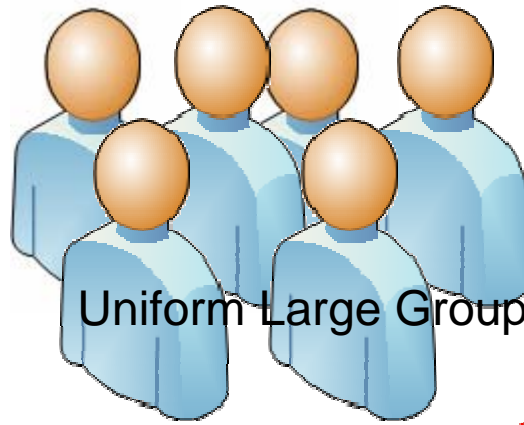




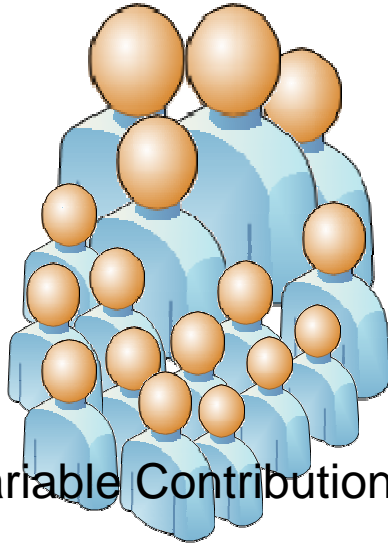
Individuals



Small Groups



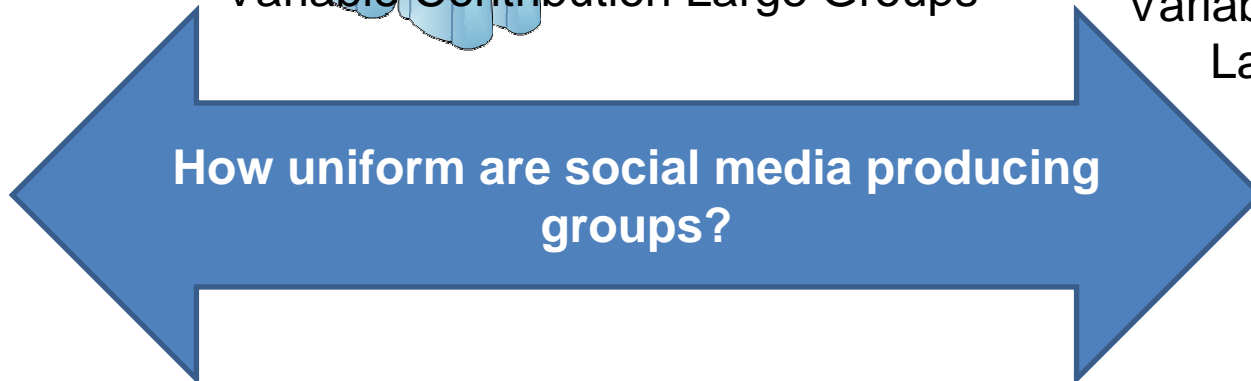
Uniform Large Groups

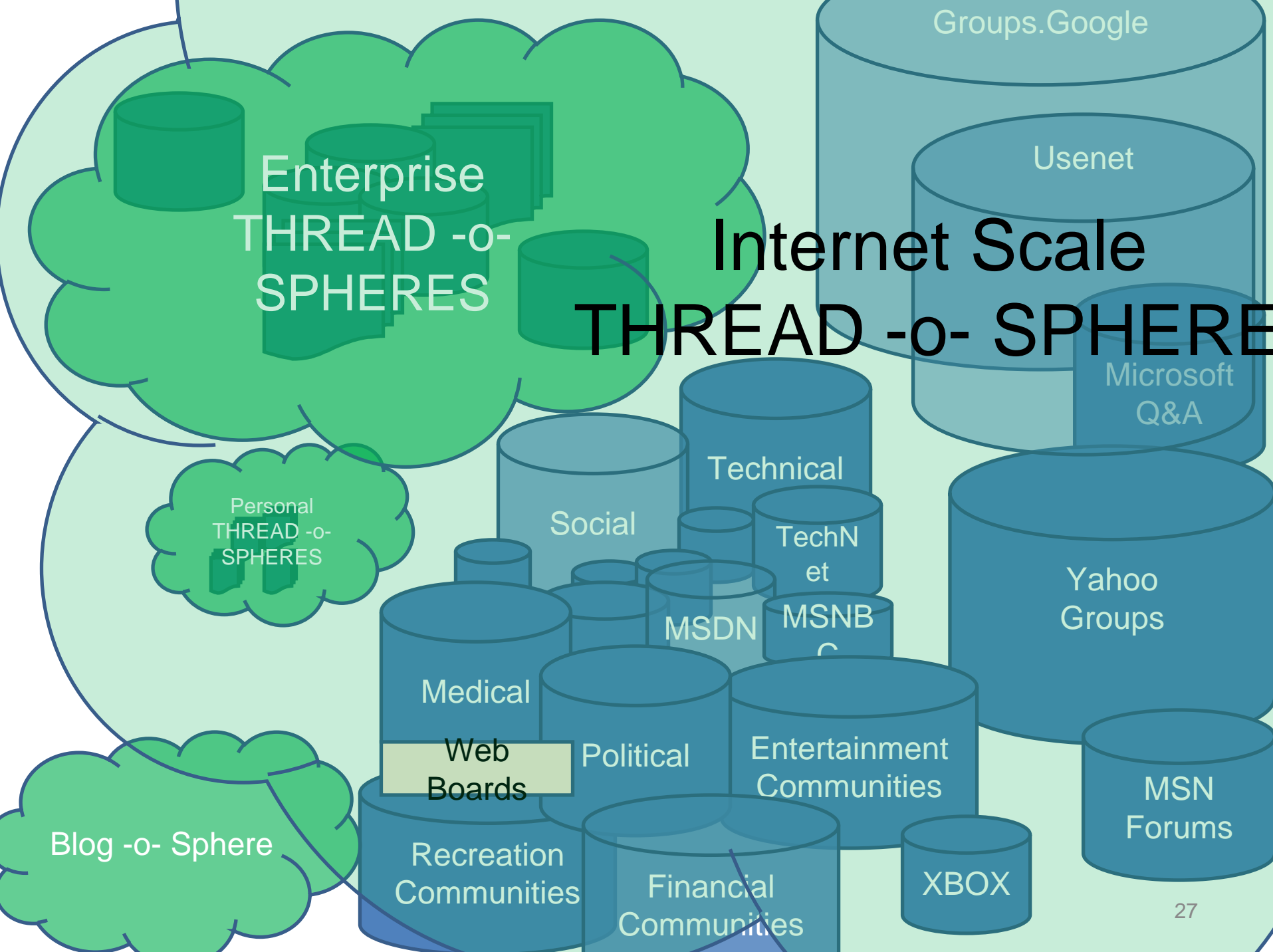


Variable Contribution Large Groups



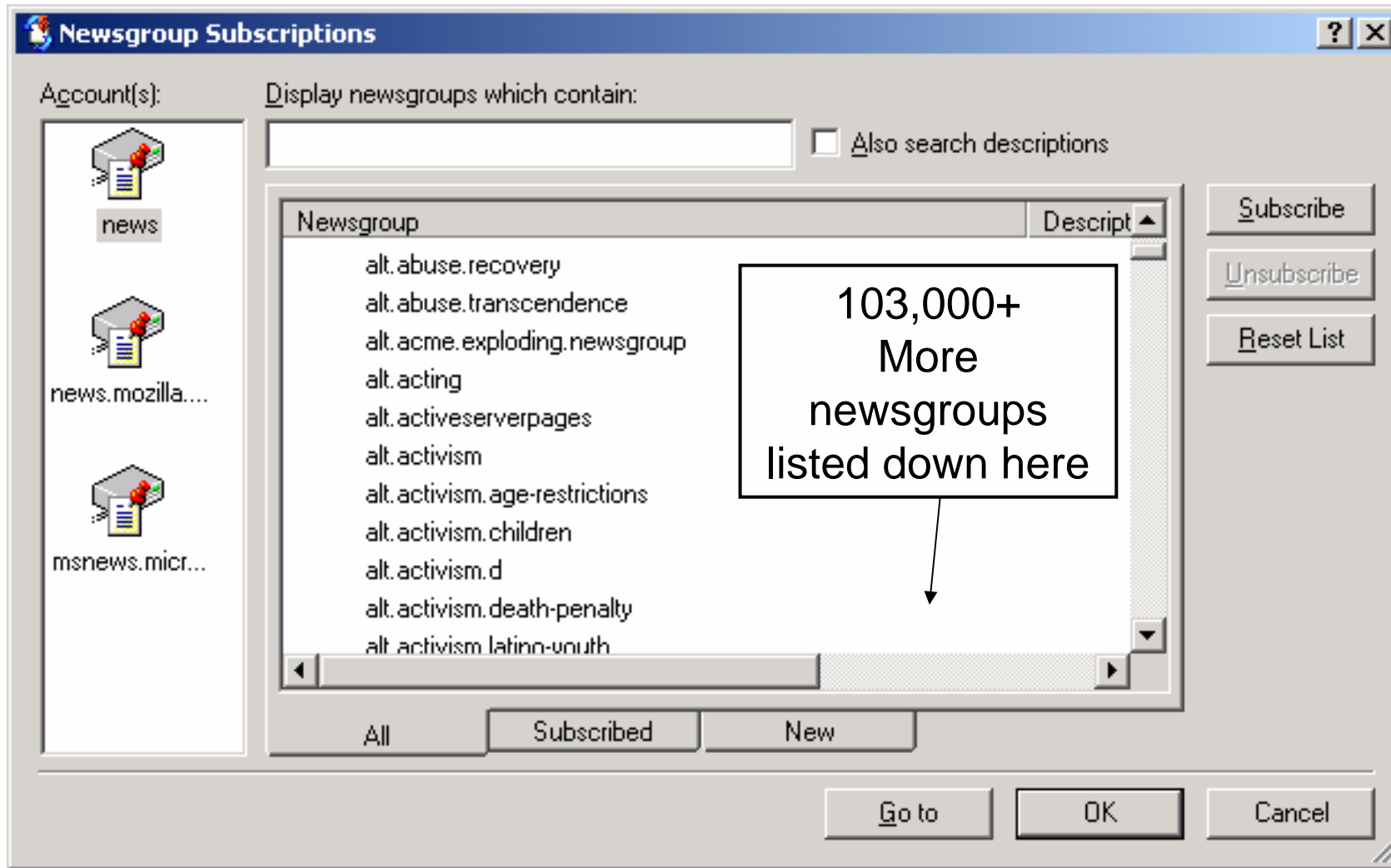
Heterogeneous
Variable Contribution
Large Groups





Support for discovery of new social spaces is limited

Most interfaces provide little or no indication of group size, activity, interconnection, growth, topic...



Support for selection of content is limited:

Common interfaces to
messages and threads
organize content only by

*Subject line text, author name,
message size, and date.*

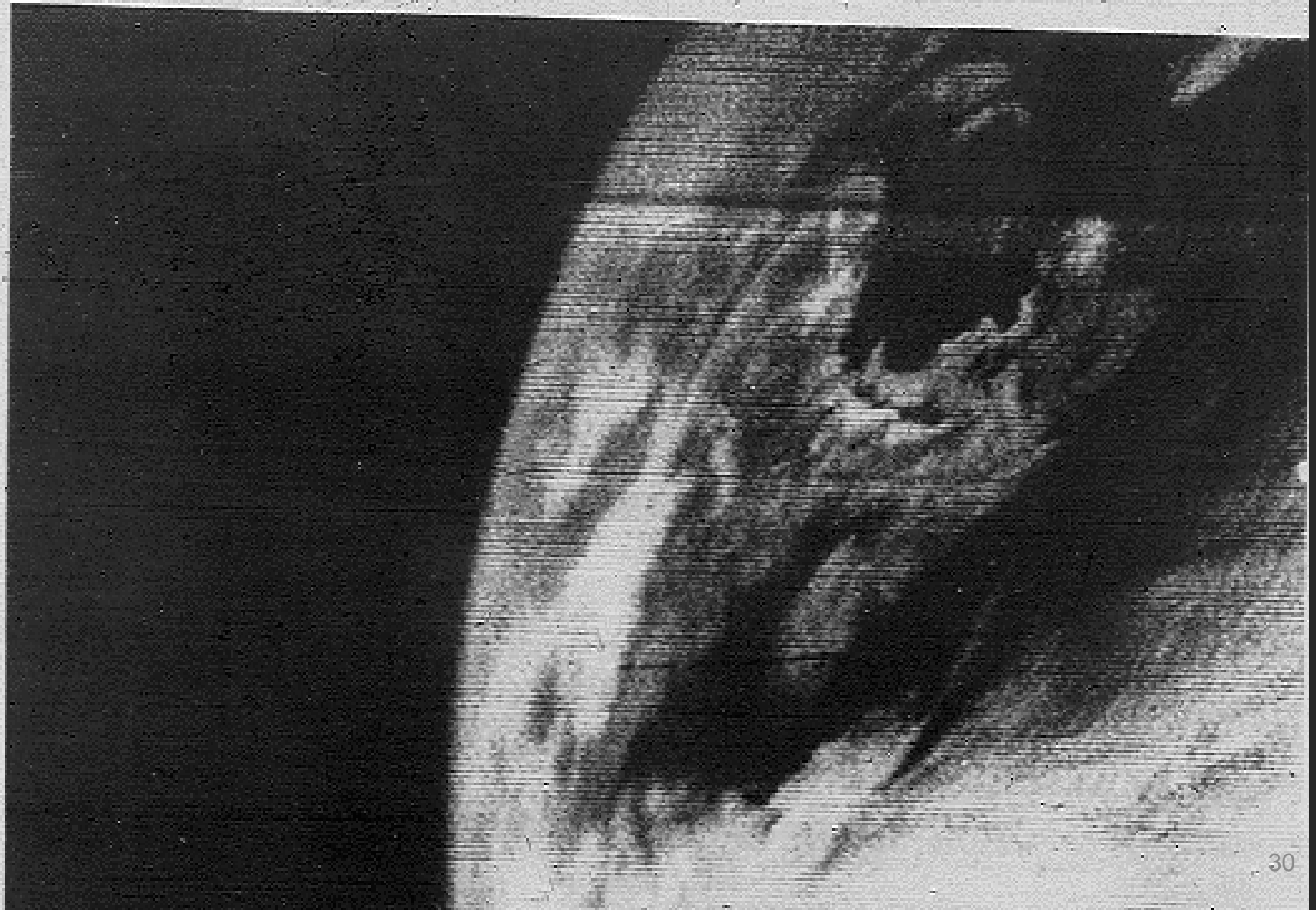
Important social dimensions of
these interactions are missing
in these interfaces, for
example:

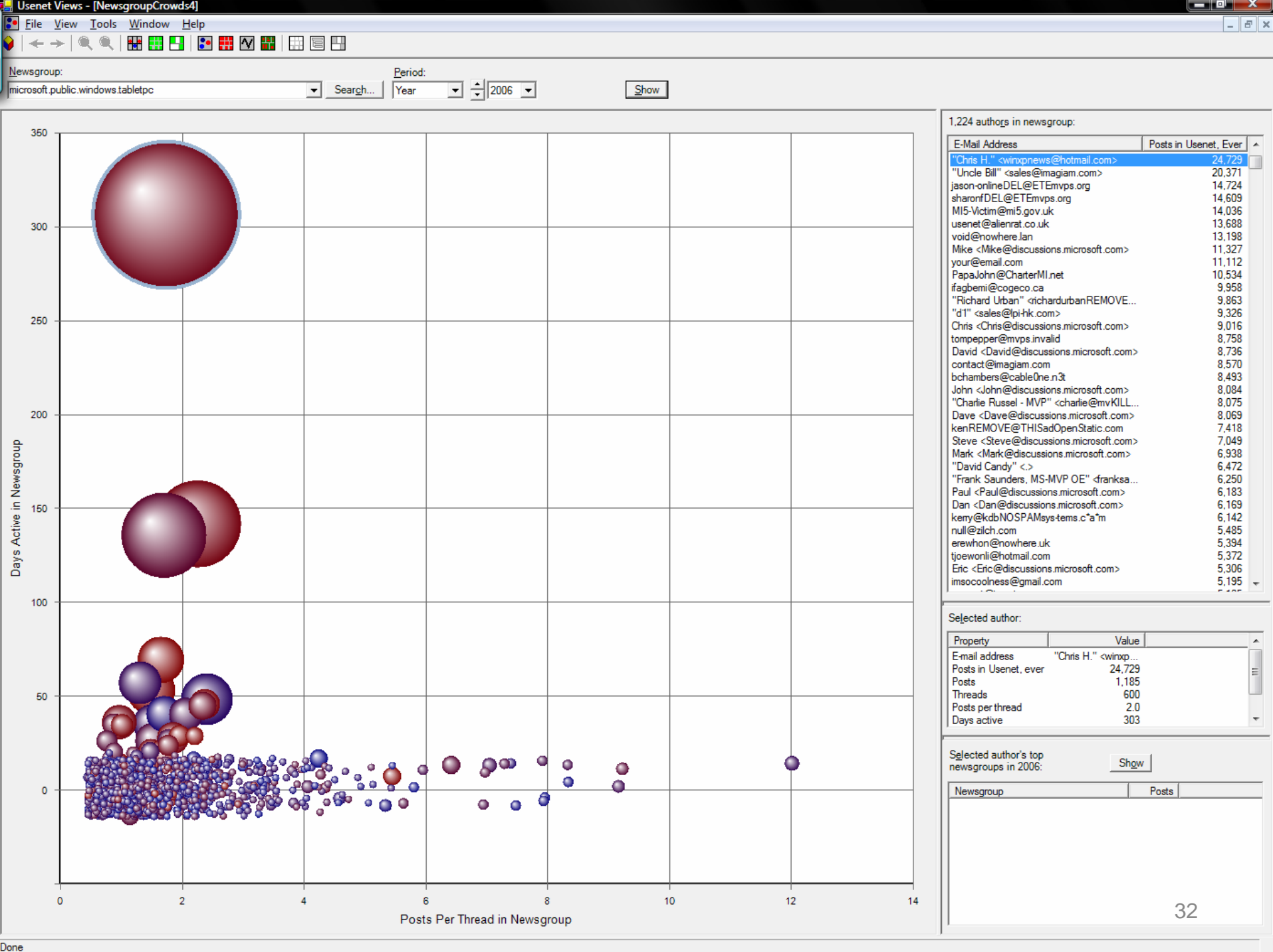
*Population, activity trends,
posting history, thread
structures.*

Subject	From	Sent	Size
Working with rows in a grid.	Ruaidhri	3/6/2001 10:52...	1KB
Winsock help	Lead	3/6/2001 10:15...	1KB
Re: Why XML?	Cesar K. San Jose	3/6/2001 11:38...	5KB
Re: Why DIM?	Jamie Webb	3/6/2001 9:36 ...	4KB
What is OwnerForm in Form.show	edmond.Ho	3/5/2001 11:40...	1KB
Re: WebBrowser Control	Alexander Rodigin	3/6/2001 11:17...	1KB
Re: VB6 Training	Sukesh Hoogan	3/6/2001 3:35 ...	1KB
VB5 SP3 in Win2000 modifies Vb5.exe?	paminof	3/6/2001 4:30 ...	1KB
Re: VB/VBScript DLL Call	CurtC125	3/6/2001 6:19 ...	2KB
vb runtime files	mrkkong	4/1/2001 2:26 ...	1KB
VB propret help!!!!	rev4bart	3/6/2001 5:13 ...	1KB
Re: VB - Usenet	David Whitman	3/6/2001 3:16 ...	2KB
variable uses an automation type not su...	olivier chicaud	3/6/2001 3:58 ...	1KB
variable indirection	JoeG	3/6/2001 9:37 ...	1KB
Utility for setting the HelpContextID	Stan Hilliard	3/6/2001 7:31 ...	1KB
Re: Updating combobox conflicts with Edi...	Larry Pittman	3/6/2001 9:29 ...	2KB
Unicode	Dave Berdan	3/6/2001 12:57...	2KB
Unicod FileFindFirst Problem	Buddy Robbins	3/6/2001 4:12 ...	1KB
Trapping a tab	Wade Wendorf	3/6/2001 9:56 ...	2KB
Re: timer problem	Malcolm	3/6/2001 9:23 ...	2KB
Re: Testing a DLL and AcriveX question	Igor Borota	3/6/2001 1:45 ...	1KB
Subset of Collection	Peter V	3/6/2001 9:10 ...	2KB
SQL Statements	Mark Cooper	3/6/2001 5:03 ...	1KB
Re: Sort listview column numerically?	Nikolaus Seydel	3/6/2001 12:01...	2KB
Size of control	Chaitanya Belwal	3/6/2001 6:01 ...	1KB
Sending HTML 2 WebBrowser control	Grant Rogers	4/1/2001 2:17 ...	1KB
Re: Selecting text at a specific line number	Pete	3/6/2001 8:32 ...	2KB
Select All in listview control	Brian	3/6/2001 1:23 ...	1KB
RE: Saving Picture	Scot	3/6/2001 7:39 ...	1KB
Runtime Error '429'	Betty	3/6/2001 9:45 ...	31KB
runtime error 13	Jane Z	3/6/2001 2:45 ...	2KB
Re: Runtime Error 10	Jamie Webb	3/6/2001 8:50 ...	5KB
RichTextBox and Riched32.dll or Riched2...	Ed	3/6/2001 2:55 ...	1KB
Re: RichTextBox and Background color	Ed	3/6/2001 2:57 ...	4KB
Re: Re-sorting an existing Access Query	DJTK	4/1/2001 2:18 ...	3KB
Re: Resize event	bearfx@not.hot.here.m...	3/6/2001 8:22 ...	2KB
Recommended Book	Gary Ridgway	3/6/2001 12:34...	1KB
Reading, reading, and learning (COM/Imp...	Dan C Douglas	3/6/2001 7:25 ...	2KB
Re: reading cookies or session variable fr...	Mike Kinasz	3/6/2001 1:53 ...	2KB
reading .doc and writing .txt (using Word ...	Narek Manouk	3/6/2001 6:53 ...	1KB
Re: Printing jpg file to a postscript printer	Jamie Webb	3/6/2001 8:17 ...	3KB
Re: Printing a complicated invoice form	Rik O'Shea	3/6/2001 3:27 ...	2KB
printer.Orientation	Ken Russell	3/6/2001 6:53 ...	1KB
Printer.font	Terry Thompson	3/6/2001 8:51 ...	1KB
Print to non-default printer	booger	3/6/2001 10:30...	1KB

FIRST TELEVISION PICTURE FROM SPACE
TIROS I SATELLITE

APRIL 1, 1960





Usenet Views - [NewsgroupCrowds4]

File View Tools Window Help

NewsGroup: microsoft.public.windows.tabletpc Search... Period: Year 2006 Show

1,224 authors in newsgroup:

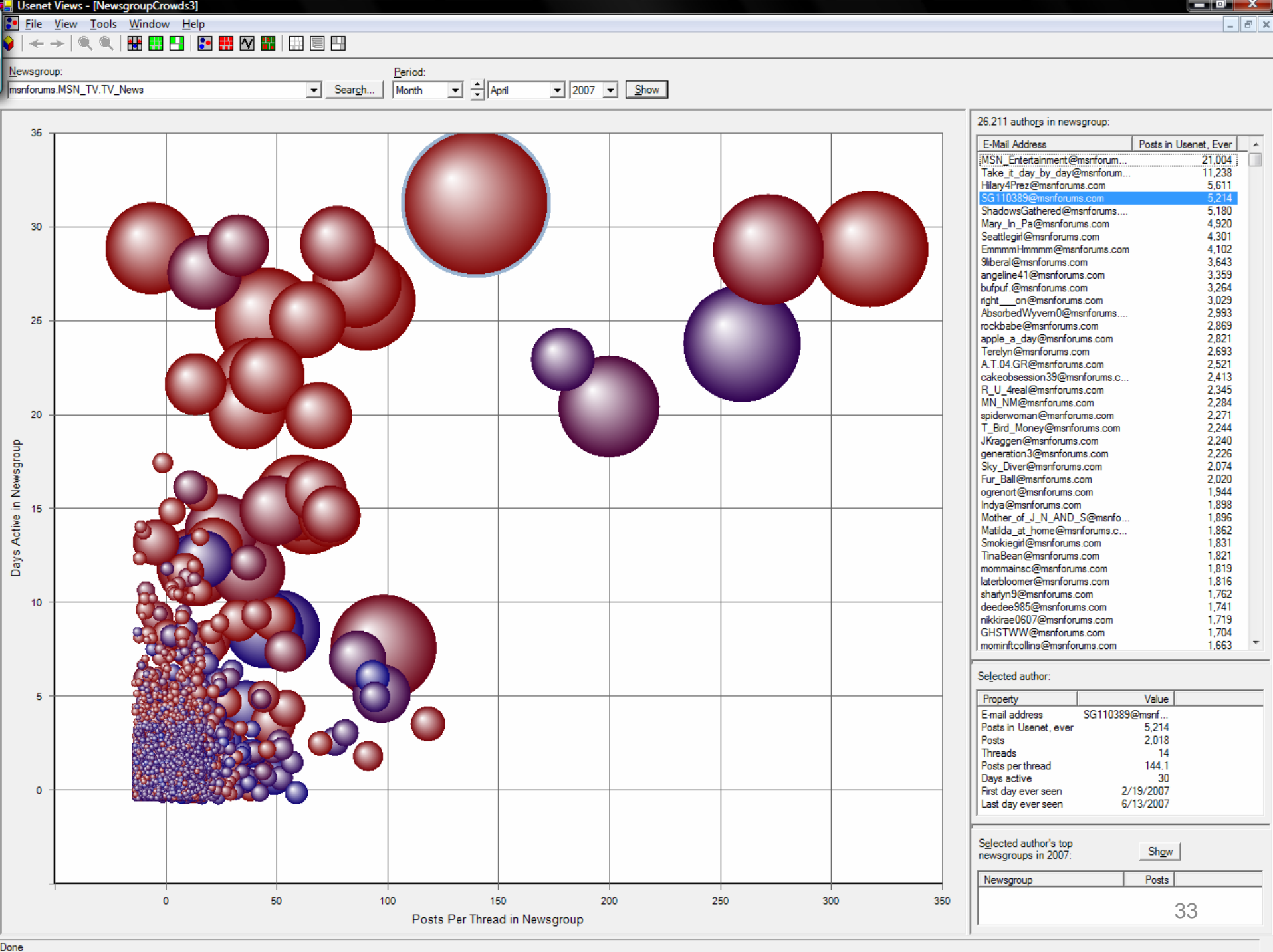
E-Mail Address	Posts in Usenet, Ever
"Chris H." <wirxpnews@hotmail.com>	24,729
"Uncle Bill" <sales@imagiam.com>	20,371
jason-onlineDEL@ETEmvps.org	14,724
sharonfDEL@ETEmvps.org	14,609
MIS-Victim@mi5.gov.uk	14,036
usenet@alienrat.co.uk	13,688
void@nowhere.lan	13,198
Mike <Mike@discussions.microsoft.com>	11,327
your@email.com	11,112
PapaJohn@CharterMI.net	10,534
fagbemi@cogeco.ca	9,958
"Richard Urban" <richardurbanREMOVE...>	9,863
"d1" <sales@pi-hk.com>	9,326
Chris <Chris@discussions.microsoft.com>	9,016
tompepper@mvps.invalid	8,758
David <David@discussions.microsoft.com>	8,736
contact@imagiam.com	8,570
bchambers@cableOne.n3t	8,493
John <John@discussions.microsoft.com>	8,084
"Charlie Russel - MVP" <charlie@mvKILL...>	8,075
Dave <Dave@discussions.microsoft.com>	8,069
kenREMOVE@THISadOpenStatic.com	7,418
Steve <Steve@discussions.microsoft.com>	7,049
Mark <Mark@discussions.microsoft.com>	6,938
"David Candy" <>	6,472
"Frank Saunders, MS-MVP OE" <franksa...>	6,250
Paul <Paul@discussions.microsoft.com>	6,183
Dan <Dan@discussions.microsoft.com>	6,169
keny@kdbNOSPAMsystems.c*a*m	6,142
null@zilch.com	5,485
erewhon@nowhere.uk	5,394
tjoewonli@hotmail.com	5,372
Eric <Eric@discussions.microsoft.com>	5,306
imsocoolness@gmail.com	5,195

Selected author:

Property	Value
E-mail address	"Chris H." <wirxp...
Posts in Usenet, ever	24,729
Posts	1,185
Threads	600
Posts per thread	2.0
Days active	303

Selected author's top newsgroups in 2006:

Newsgroup	Posts



26,211 authors in newsgroup:

E-Mail Address	Posts in Usenet, Ever
MSN_Entertainment@msnforum...	21,004
Take_it_day_by_day@msnforum...	11,238
Hilary4Prez@msnforums.com	5,611
SG110389@msnforums.com	5,214
ShadowsGathered@msnforums...	5,180
Mary_In_Pa@msnforums.com	4,920
Seattlegirl@msnforums.com	4,301
EmmmmHmmm@msnforums.com	4,102
9liberal@msnforums.com	3,643
angeline41@msnforums.com	3,359
bufpuf_@msnforums.com	3,264
right__on@msnforums.com	3,029
AbsorbedWyvern0@msnforums...	2,993
rockbabe@msnforums.com	2,869
apple_a_day@msnforums.com	2,821
Terelyn@msnforums.com	2,693
A.T.04.GR@msnforums.com	2,521
cakeobsession39@msnforums.c...	2,413
R_U_4real@msnforums.com	2,345
MN_NM@msnforums.com	2,284
spiderwoman@msnforums.com	2,271
T_Bird_Money@msnforums.com	2,244
JKraggen@msnforums.com	2,240
generation3@msnforums.com	2,226
Sky_Diver@msnforums.com	2,074
Fur_Ball@msnforums.com	2,020
ogrenort@msnforums.com	1,944
Indya@msnforums.com	1,898
Mother_of_J_N_AND_S@msnfo...	1,896
Matilda_at_home@msnforums.c...	1,862
Smokiegirl@msnforums.com	1,831
TinaBean@msnforums.com	1,821
mommainsc@msnforums.com	1,819
laterbloomer@msnforums.com	1,816
sharllyn9@msnforums.com	1,762
deedee985@msnforums.com	1,741
nikkirae0607@msnforums.com	1,719
GHSTWW@msnforums.com	1,704
mominfcollins@msnforums.com	1,663

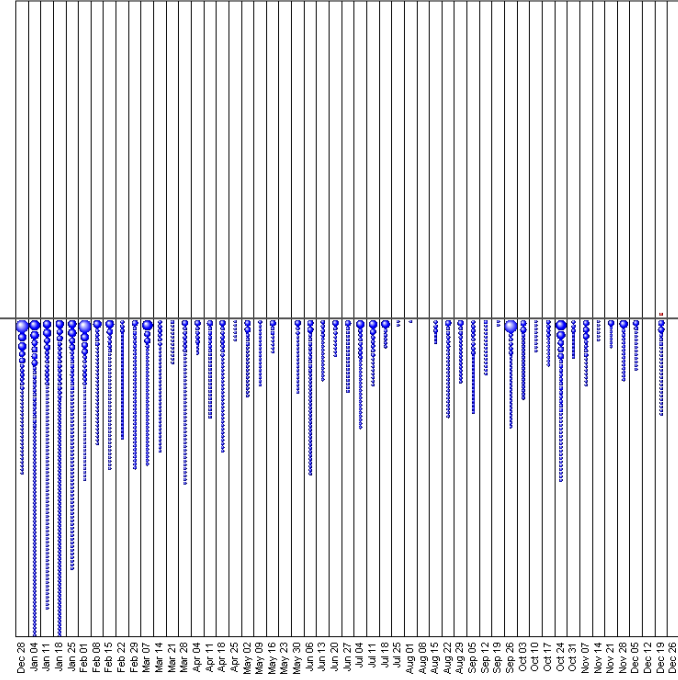
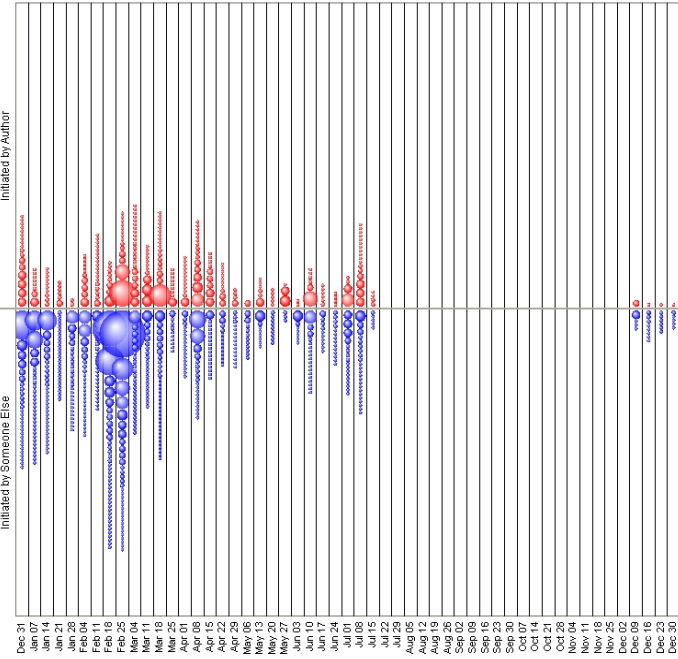
Selected author:

Property	Value
E-mail address	SG110389@msnf...
Posts in Usenet, ever	5,214
Posts	2,018
Threads	14
Posts per thread	144.1
Days active	30
First day ever seen	2/19/2007
Last day ever seen	6/13/2007

Selected author's top newsgroups in 2007: Show

Newsgroup	Posts
	33

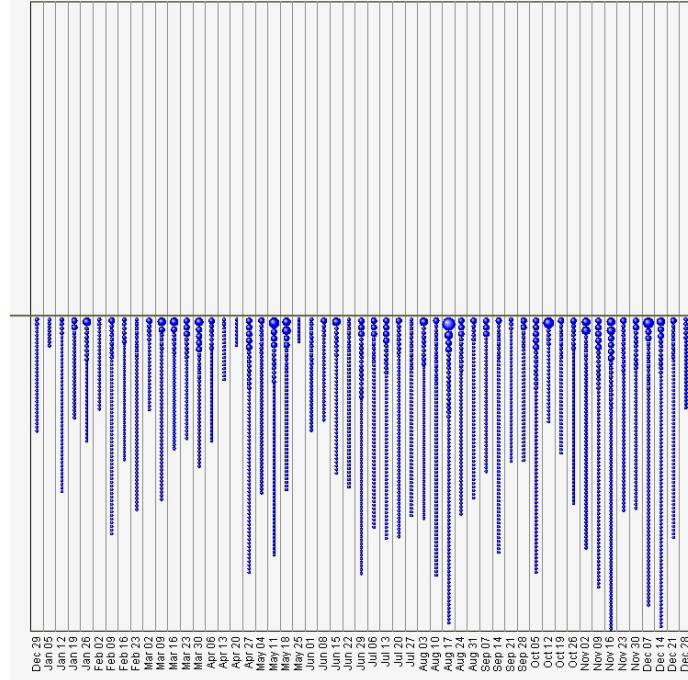
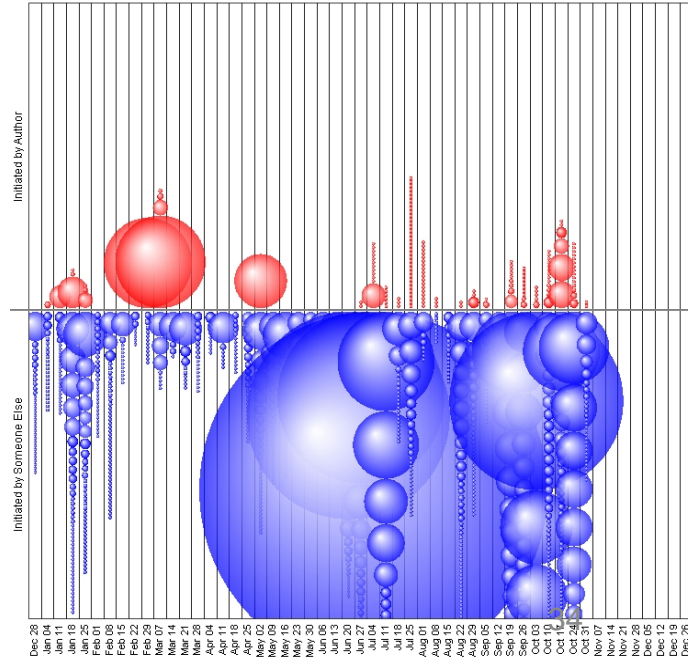
Alienvampire.flonk.flonk.flonk

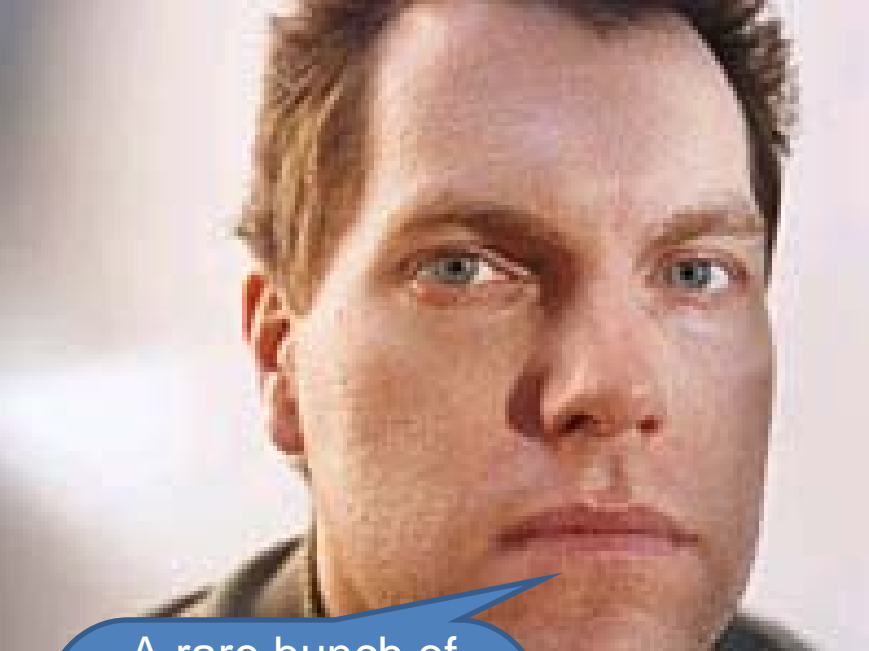


Discussion
People

Answer
Person
Signatures

Server.general

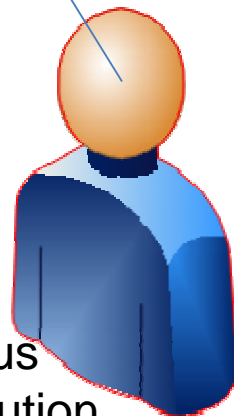
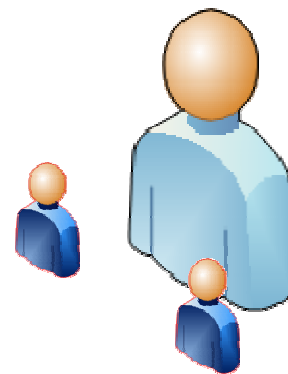
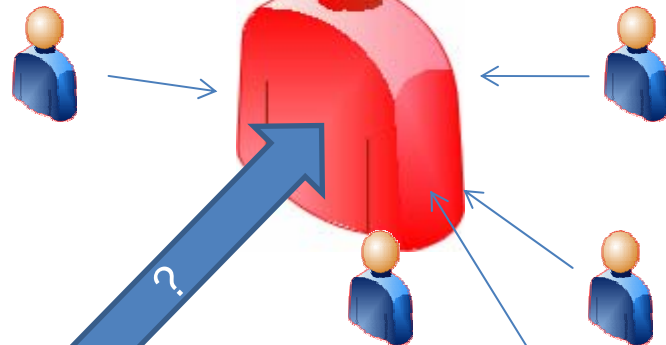
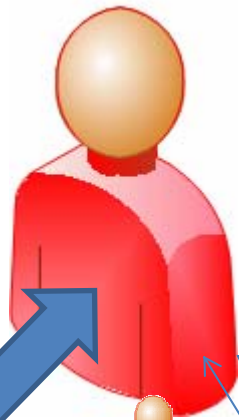
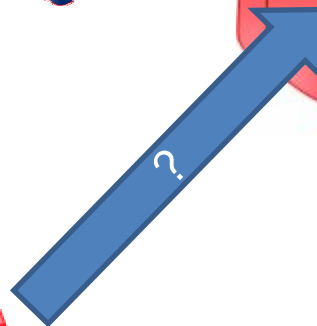
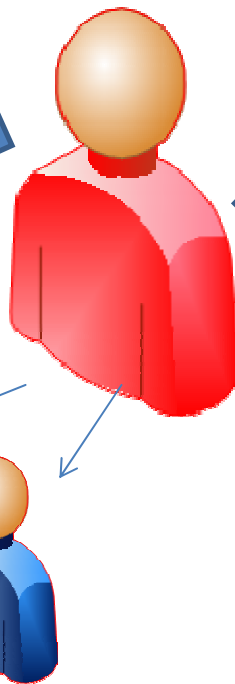
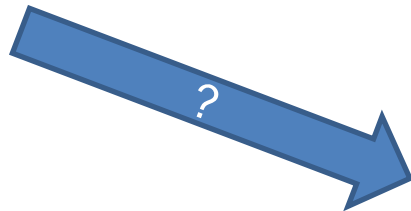
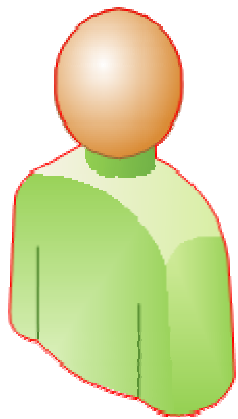




A rare bunch of cool people just don't have that power. And when you test the way marketers say the world works, it falls apart. There's no *there* there.



What we are really saying," he writes, "is that in a given process or system, some people matter more than others.



Heterogeneous
Variable Contribution
Large Groups



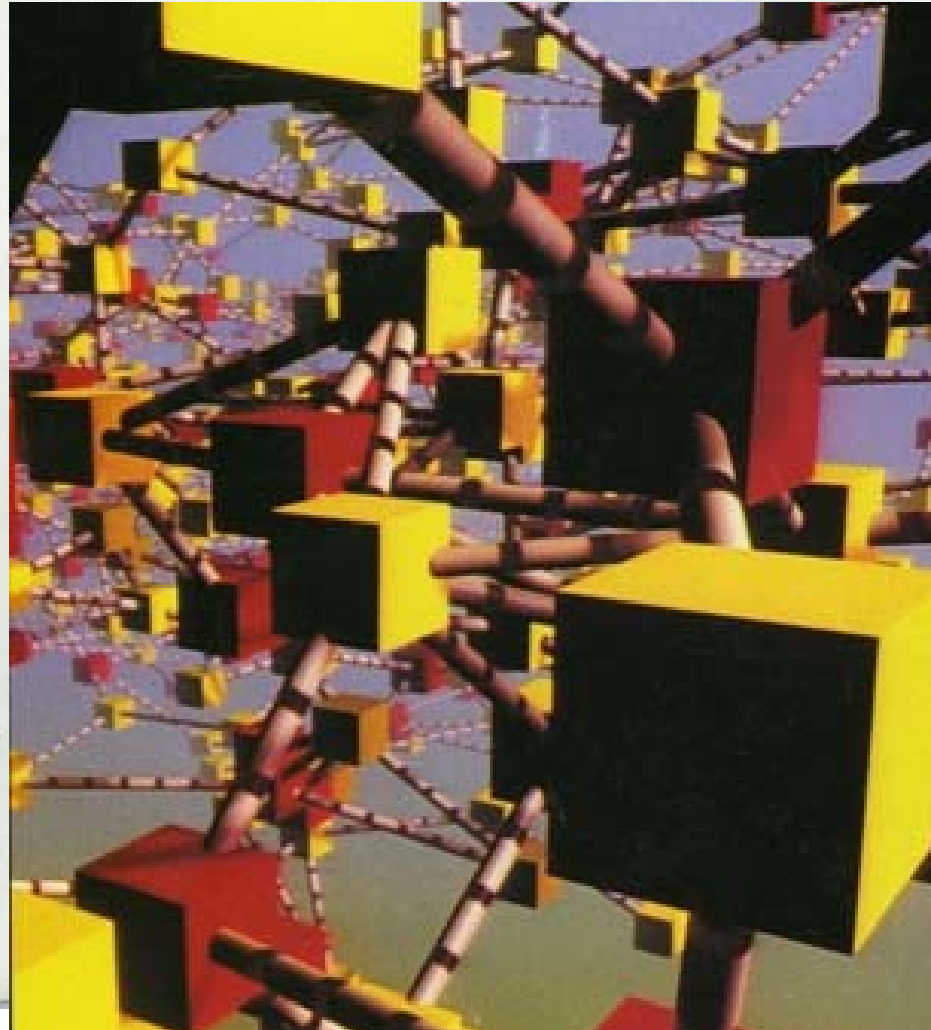
How are social media producing groups connected?

SCIENTIFIC AMERICAN

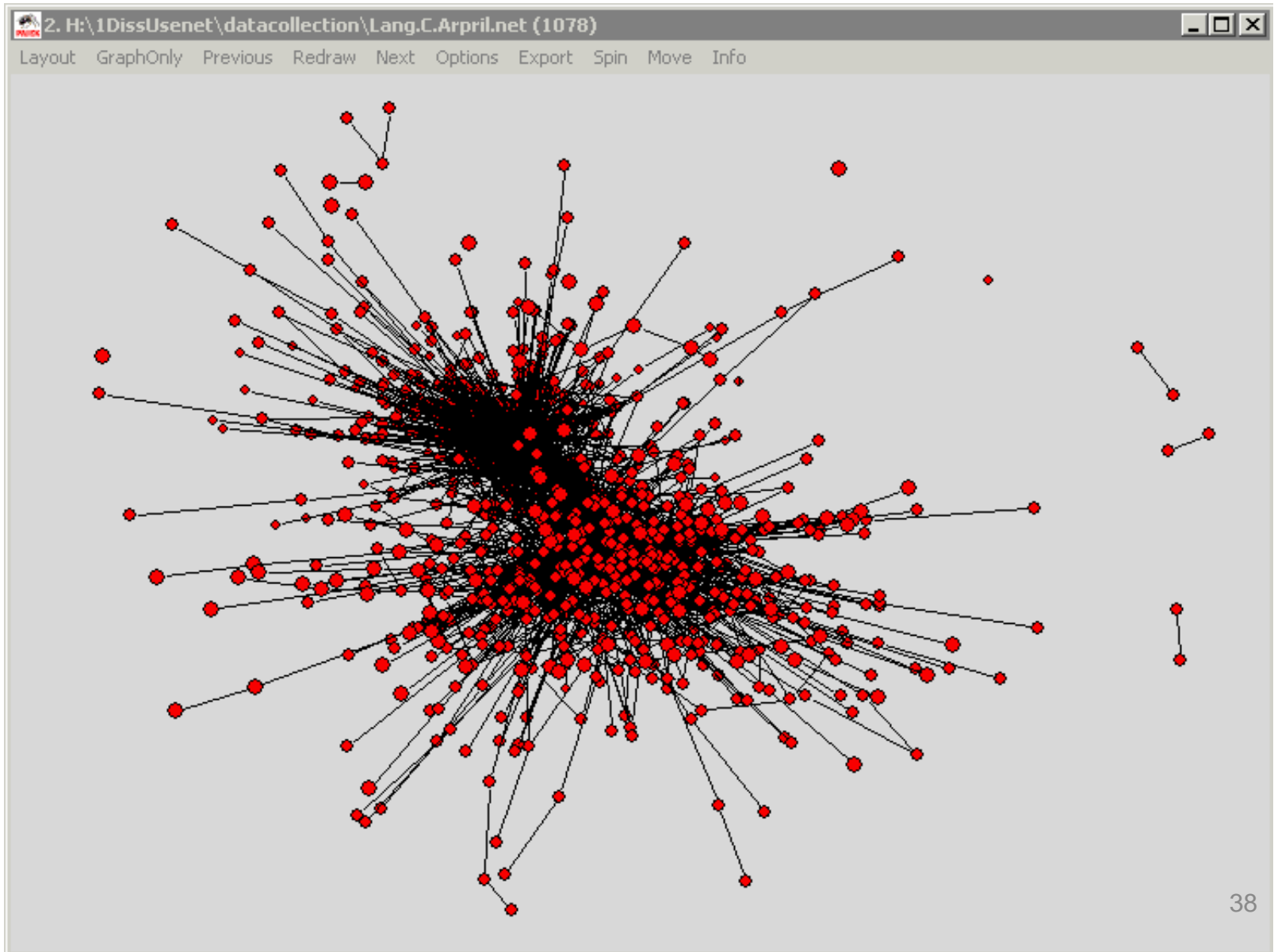
SEPTEMBER 1991
\$3.95

**SPECIAL
ISSUE**

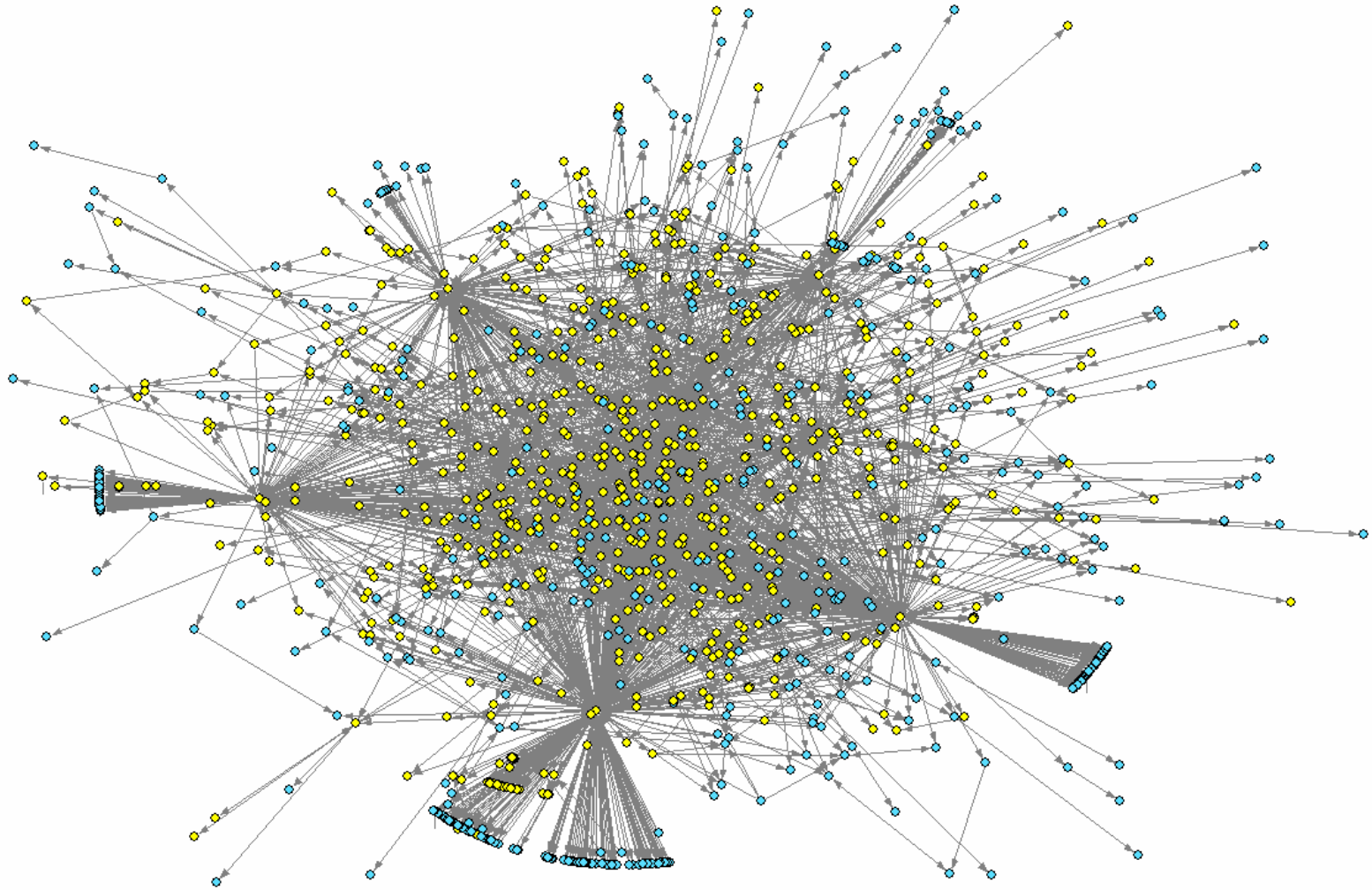
**Communications, Computers
and Networks**



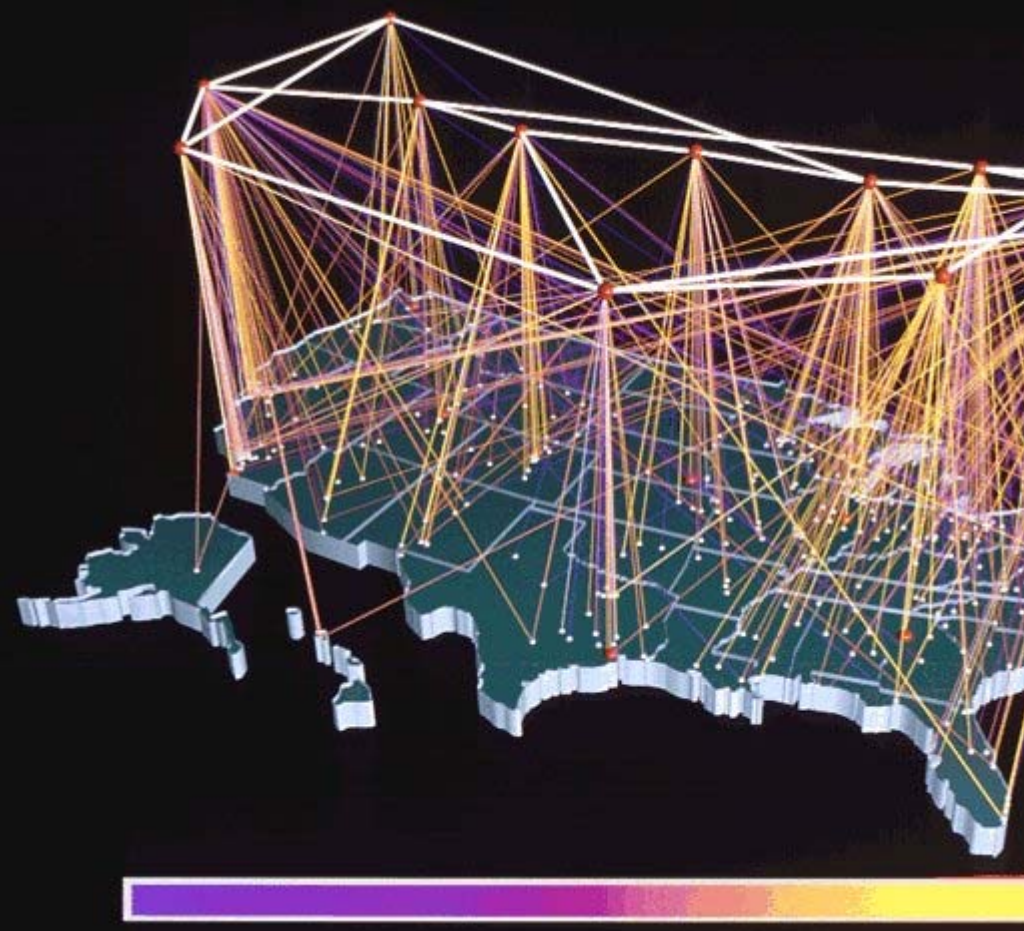
The Ties that Blind?



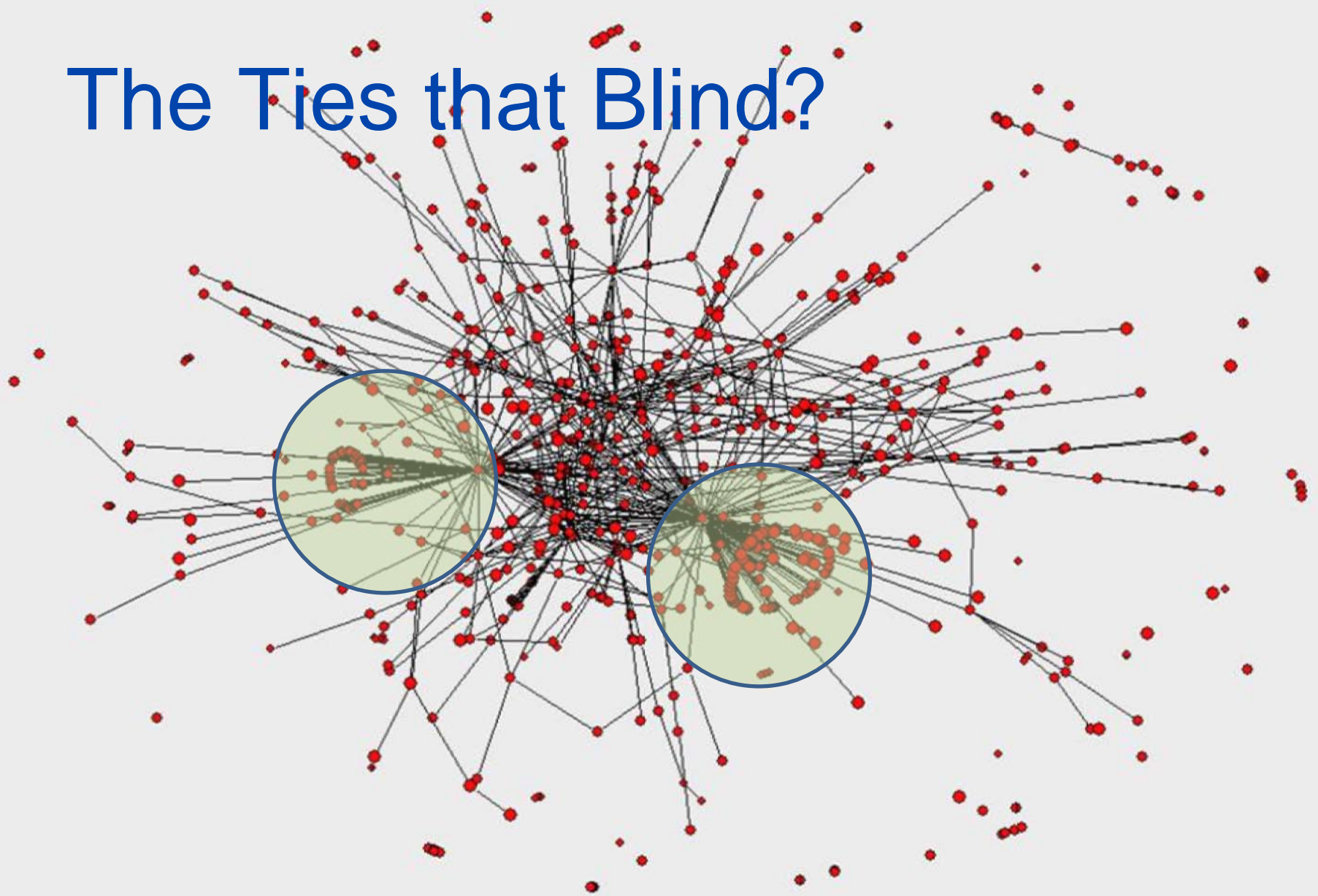
The Ties that Blind?



Reply-To Network
Network at distance 2 for the most prolific author of the
microsoft.public.internetexplorer.general newsgroup

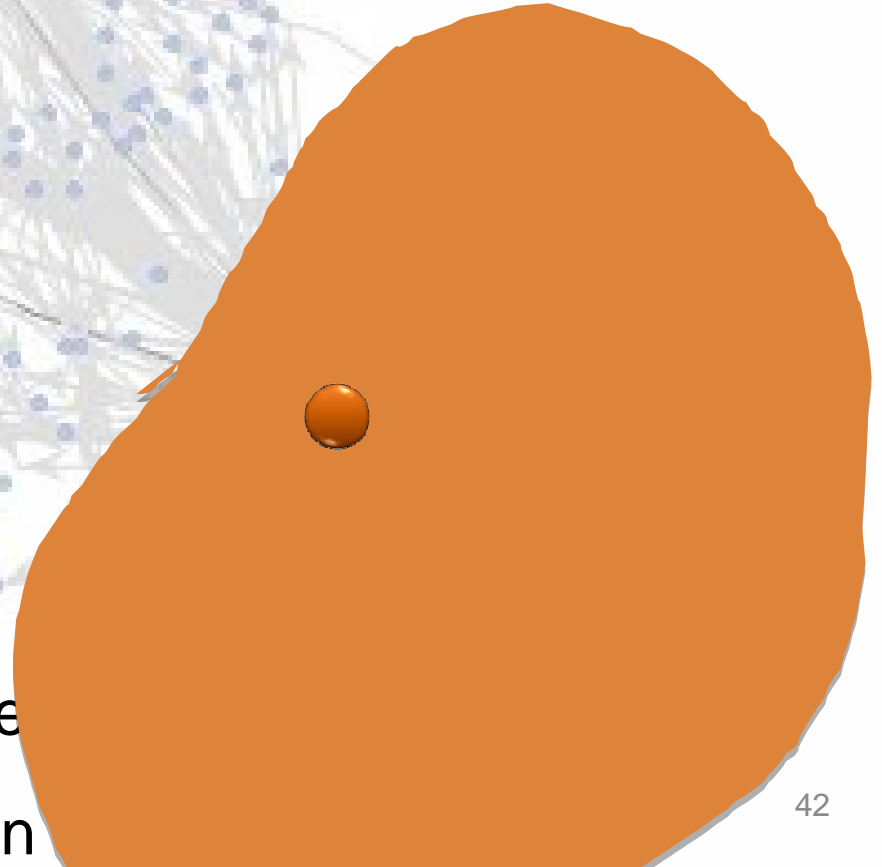
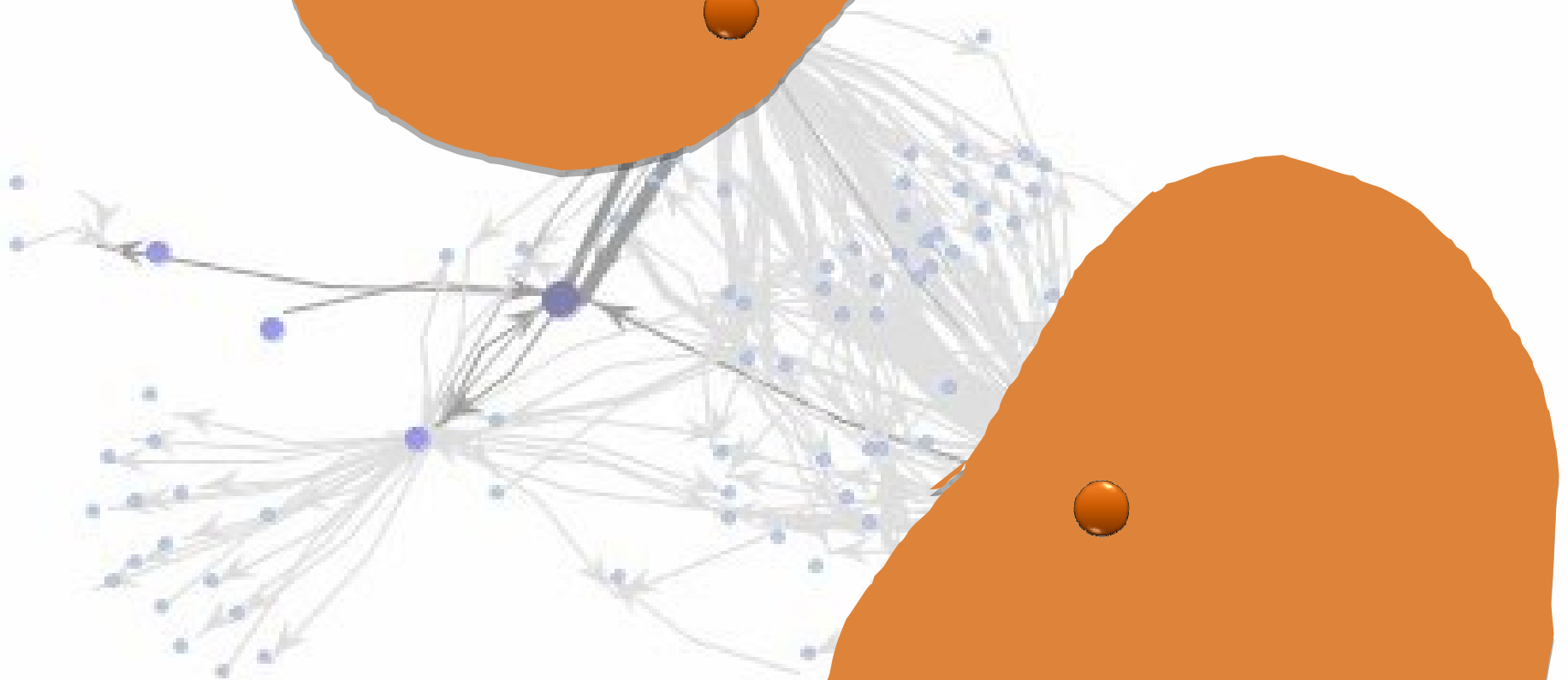
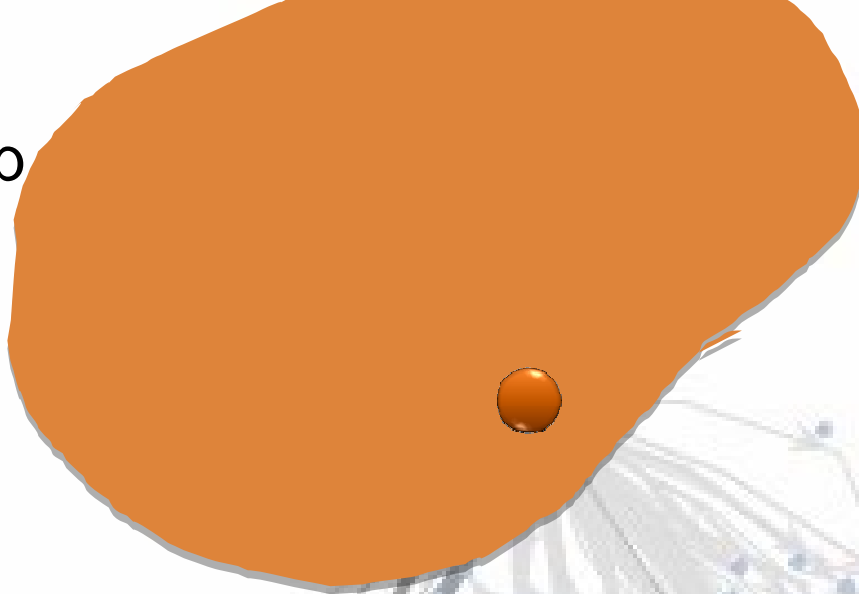


The Ties that Blind?



Pajek without modification can sometimes reveal structures of great interest.

Mapping
Newsgroup
Social
Ties



Microsoft.public.windowsxp.serv

Two “answer people” with an



Distinguishing attributes:

- **Answer person**

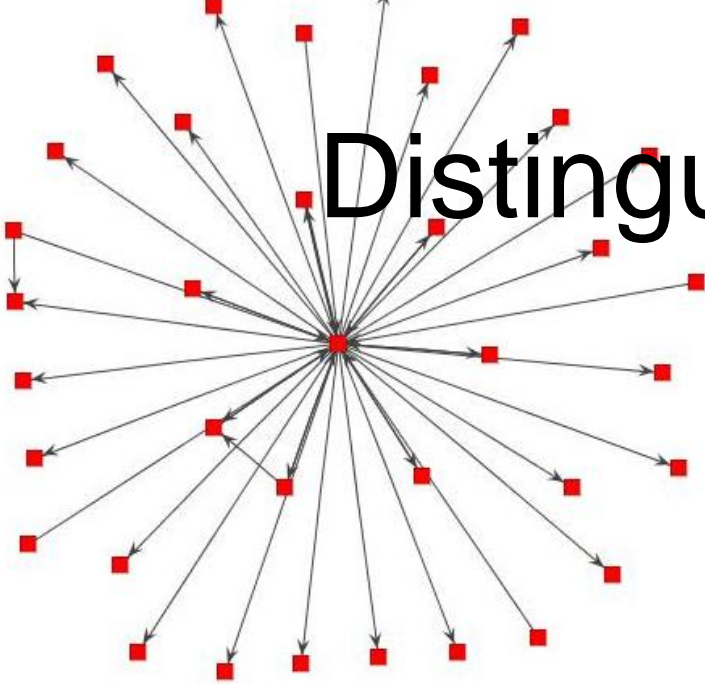
- Outward ties to local isolates
- Relative absence of triangles
- Few intense ties

- **Reply Magnet**

- Ties from local isolates often inward only
- Sparse, few triangles
- Few intense ties

Journal of Social Structure:
“Visualizing the Signatures of Social Roles in Online Discussion Groups”
<http://www.cmu.edu/joss/content/articles/volume8/Welser/>

Distinguishing attributes:

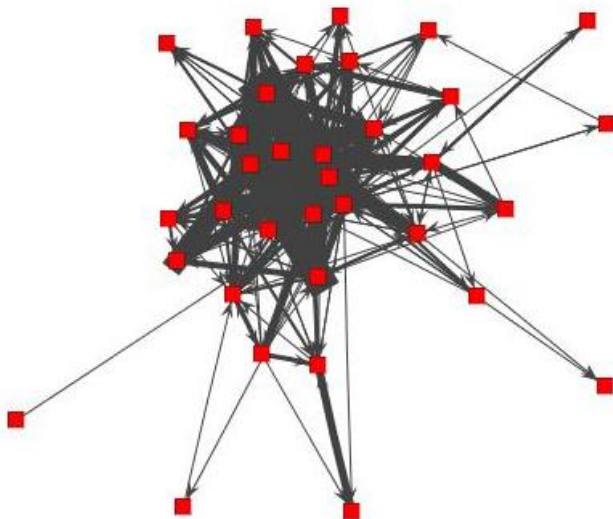


- **Answer person**

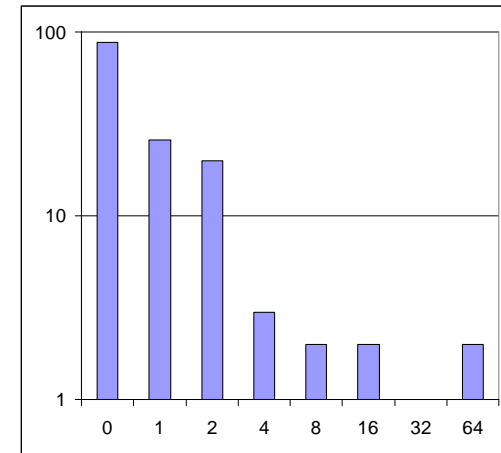
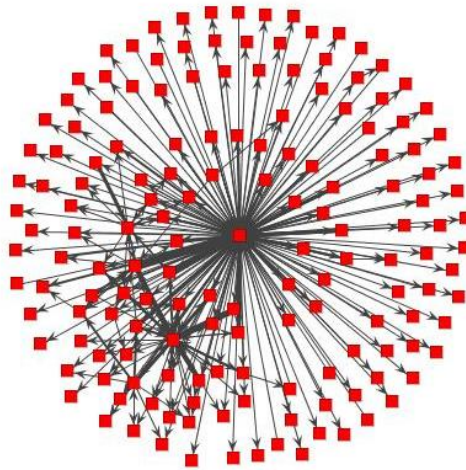
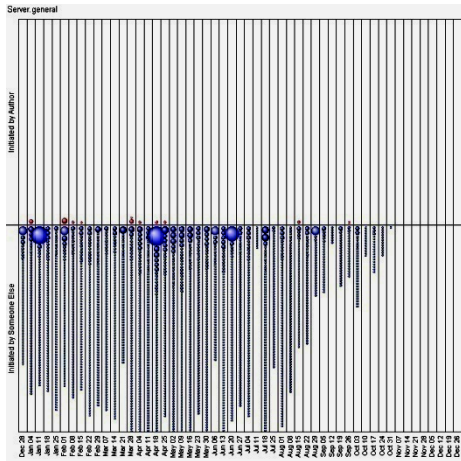
- Outward ties to local isolates
- Relative absence of triangles
- Few intense ties

- **Discussion person**

- Ties from local isolates often inward only
- Dense, many triangles
- Numerous intense ties



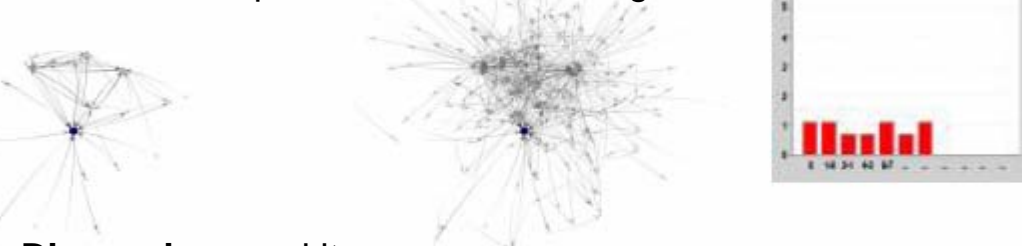
Clear and consistent signatures of an “Answer Person”



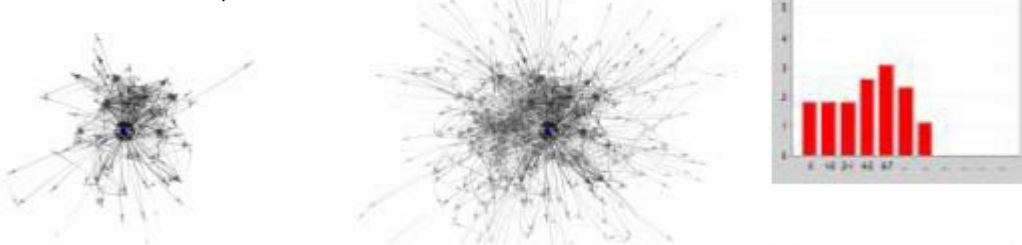
- Light touch to numerous threads initiated by someone else
- Most ties are outward to local isolates
- Many more ties to small fish than big fish



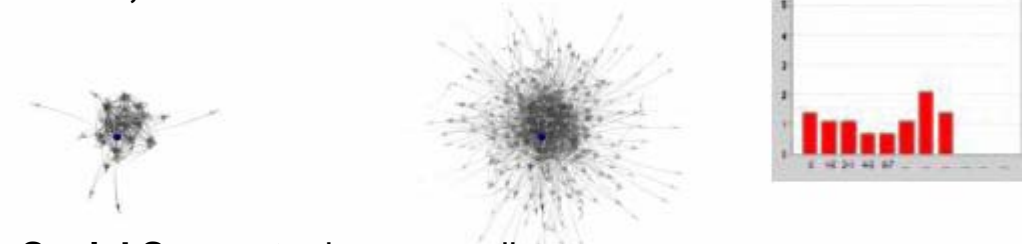
Answer Person,
microsoft.public.windows.server.general



Discussion, rec.kites



Flame, alt.flame



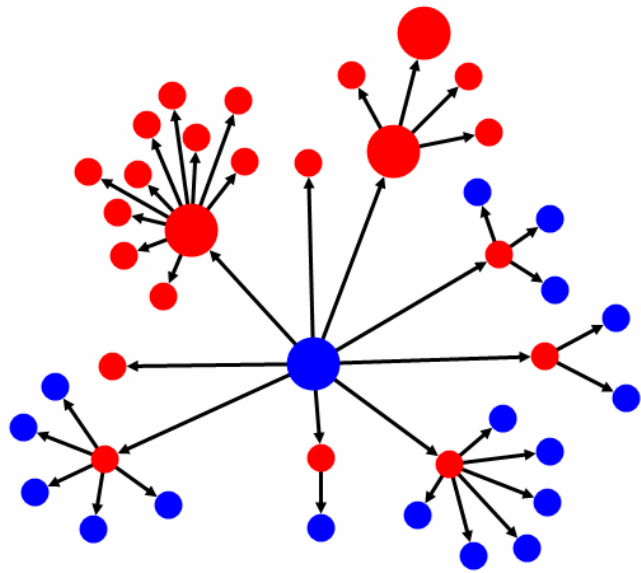
Social Support, alt.support.divorce

Roles Project

- Using Netscan data to derive social roles in Usenet
- Next steps: quantify & explore in more depth

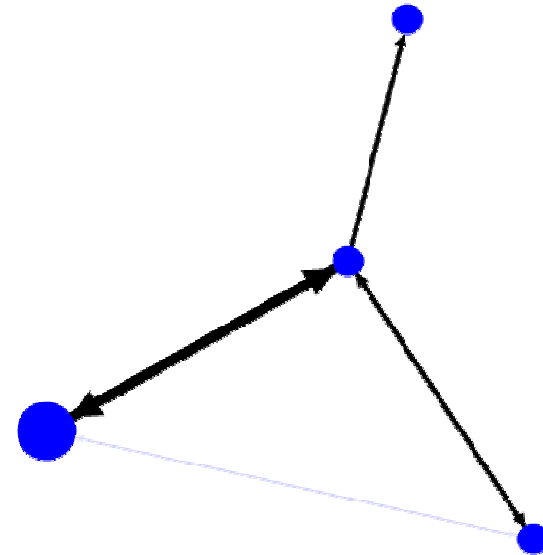


PUBLISHED in HICSS, JCMC, JoSS, IEEE Internet Communications (special issue on Social Networks)



“Wallop” Blogging system
social network data set

Enthusiast Invite Tree



Invited by
Regular User

“Some Users Pack a
Wallop”

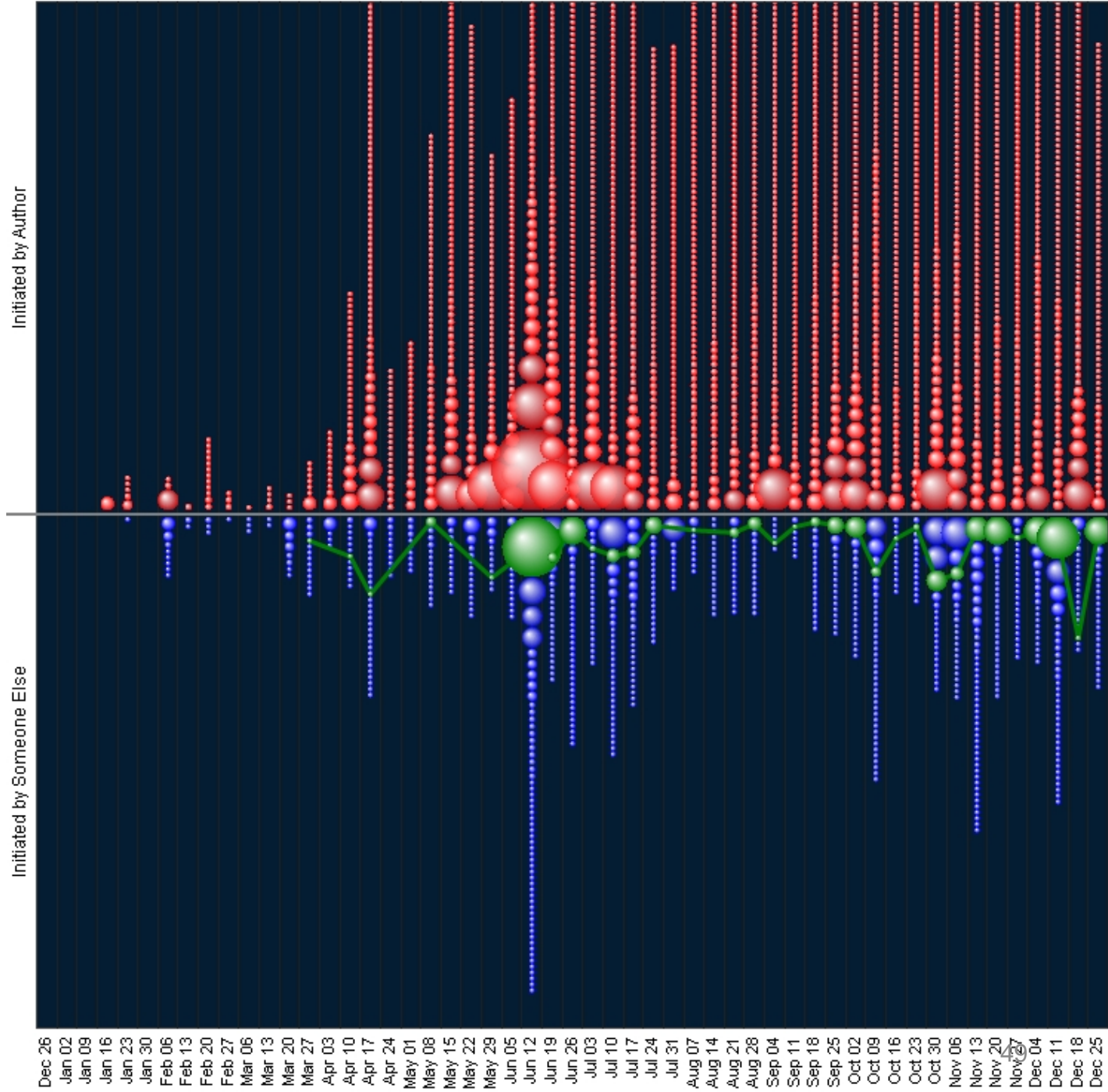
ICWSM 2008

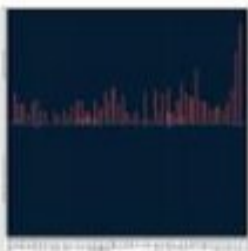
Lento, Gleave, Welser,
Smith

Wikipedia
Edits:

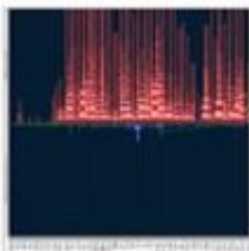
Highlights

Amount
Distribution
Timing
Content
Specificity

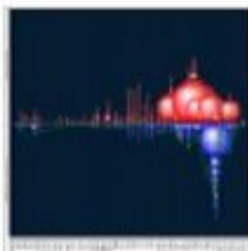




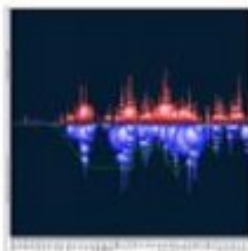
Andres.aln.bmp



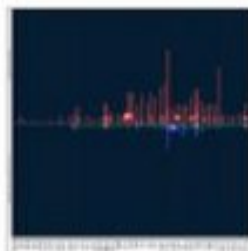
AndycjpShortTimer.aln...



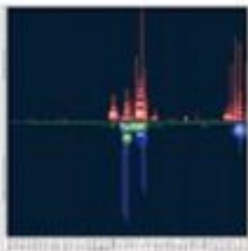
COGDEN.aln.bmp



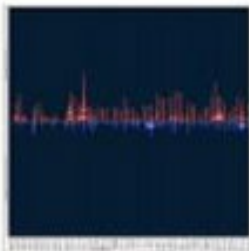
Commodore
Sloat.aln.bmp



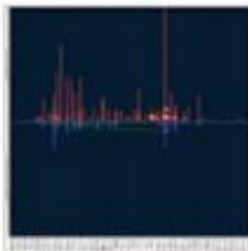
Dmmeus.aln.bmp



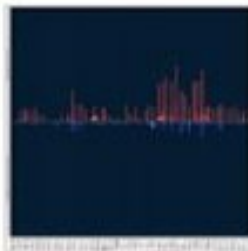
EricShalov.aln.bmp



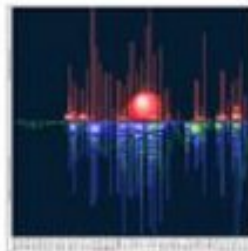
Fluzwup.aln.bmp



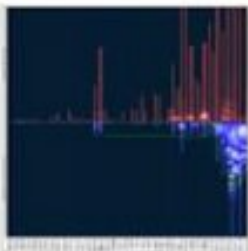
Herbee.aln.bmp



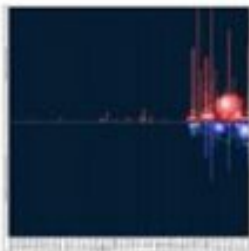
Hhielscher.aln.bmp



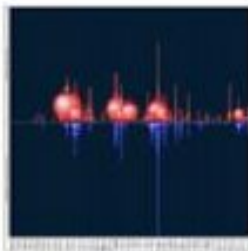
JCarrikerAdminBigWig...



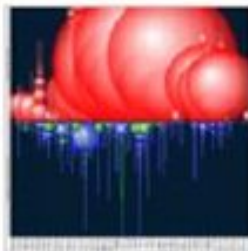
eenan Pepper.aln.bmp



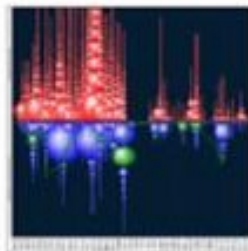
Keepsleeping.aln.bmp



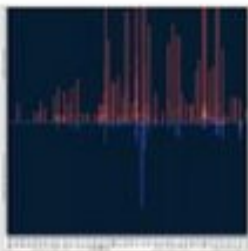
Naryathegreat.aln.bmp



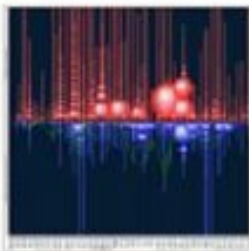
PedanticallySpeaking...



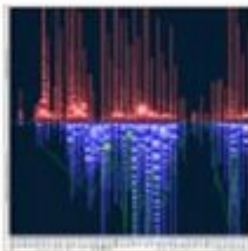
SteviethemanUserTalk...



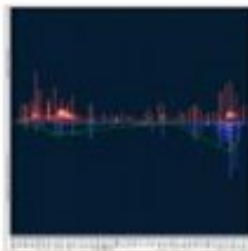
uruenaSmallEditsIma...



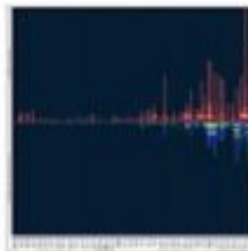
Tomf688UserPage.aln...



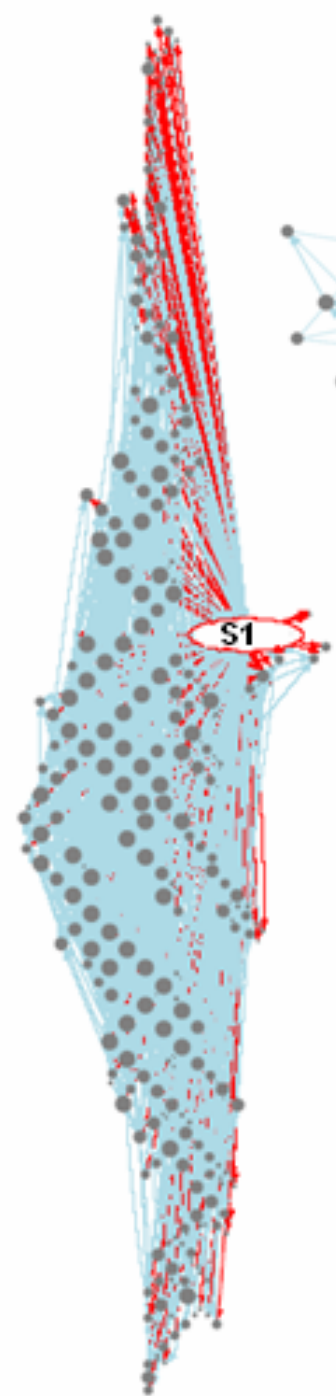
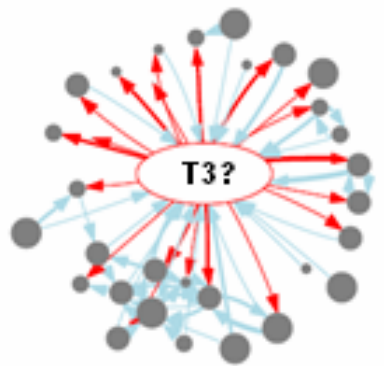
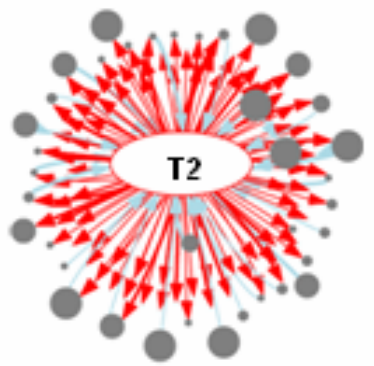
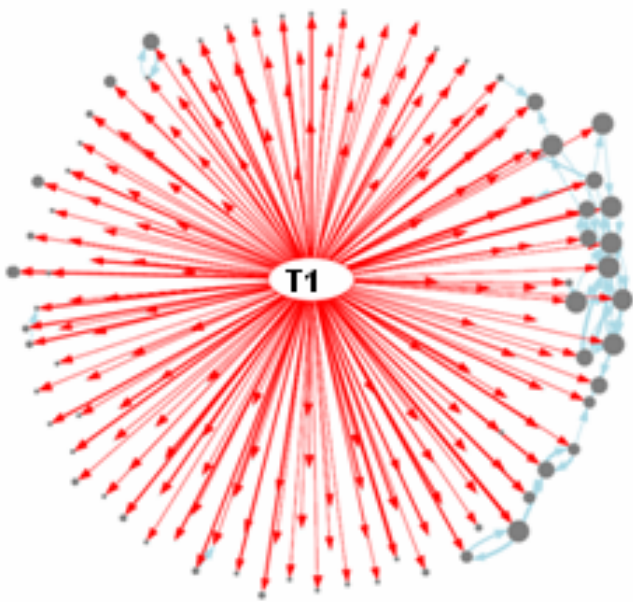
TShilo12TalkTalkTalk.a...



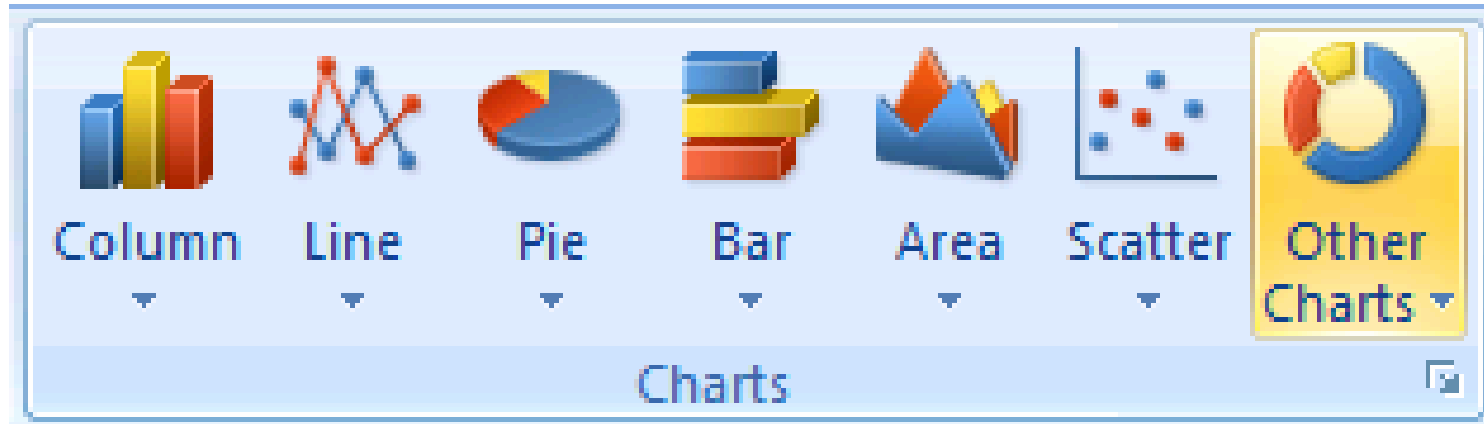
Wikiwizzy.aln.bmp

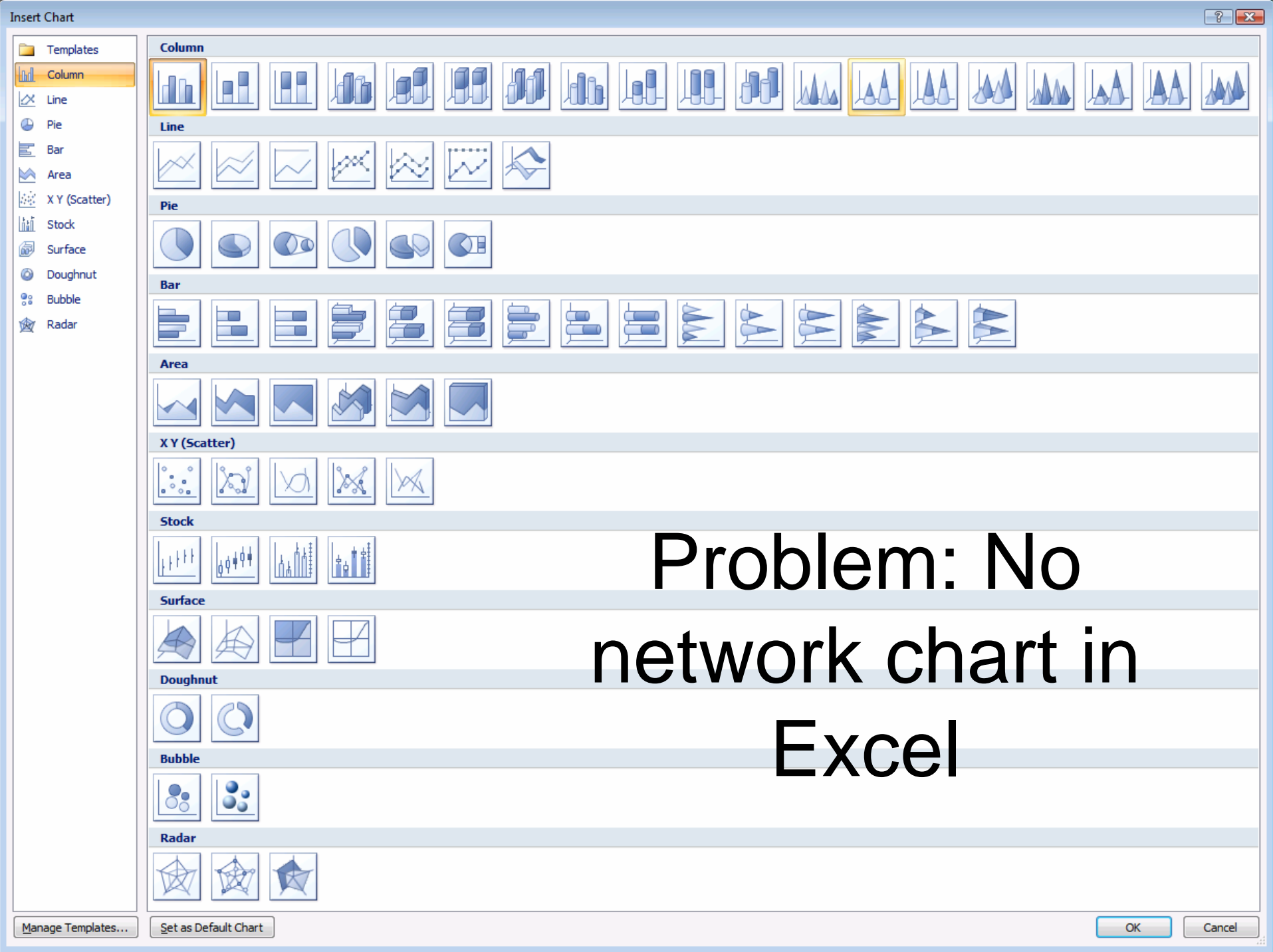


Zenohockey.aln.bmp



Problem: No network chart in Excel





- Templates
- Column**
- Line
- Pie
- Bar
- Area
- XY (Scatter)
- Stock
- Surface
- Doughnut
- Bubble
- Radar

Column

Line

Pie

Bar

Area

XY (Scatter)

Stock

Surface

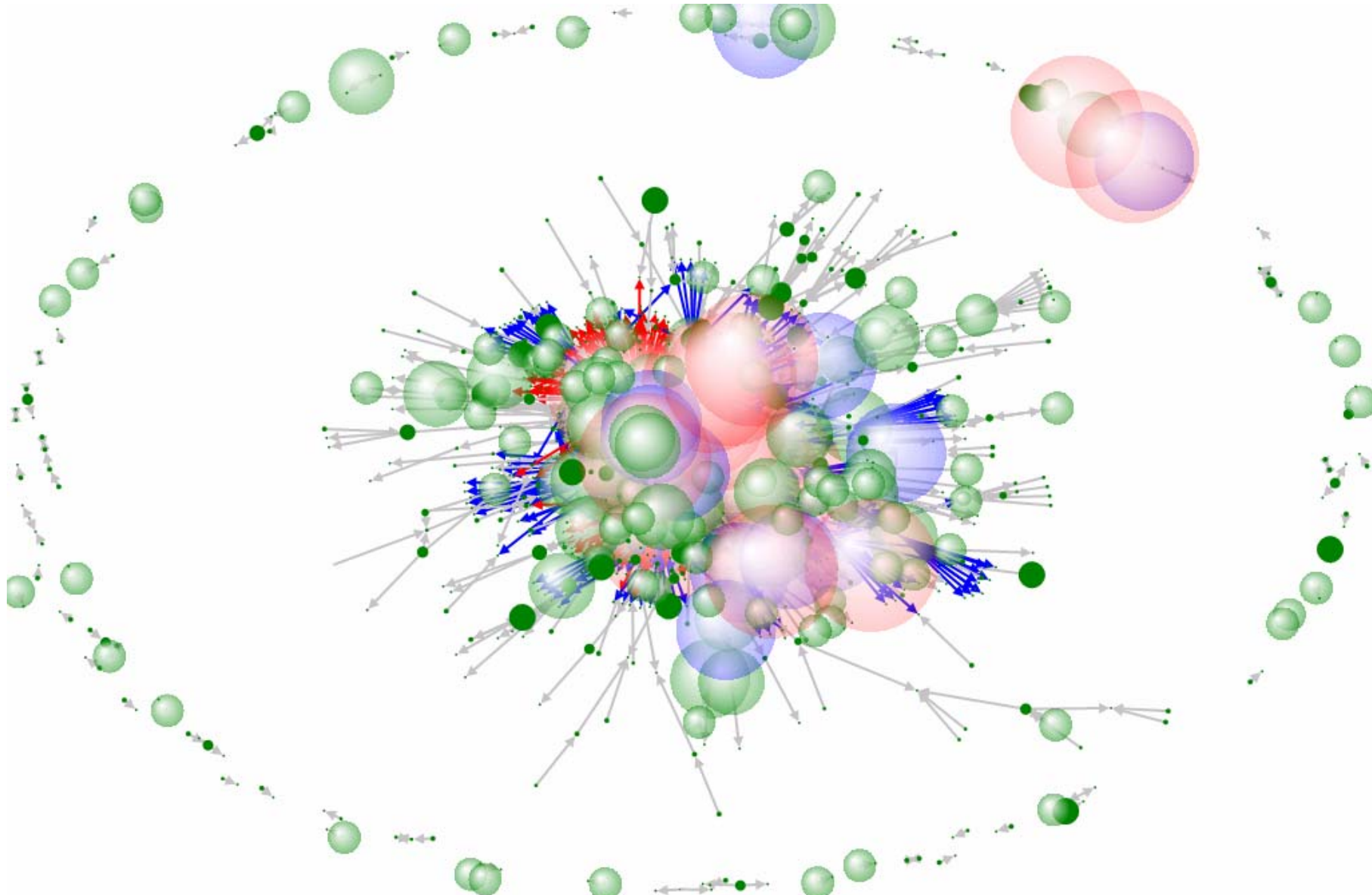
Doughnut

Bubble

Radar

Problem: No network chart in Excel

Excel .NetMap



Excel .NetMap

24	36886710	41881433			
25	36886710	41589843			
26	36886710	35685979			
27	36019771	41820441			
28	36012295	41881137			

Navigation: Edges Vertices Images

Ready

SampleSocialNetworkv5.xlsx - Microsoft Excel

Table Tools: Design

Home Insert Page Layout Formulas Data Review View Developer Add-Ins

C#UNG Mindjet MindManager

Menu Commands Toolbar Commands Custom Toolbars C#UNG 2008

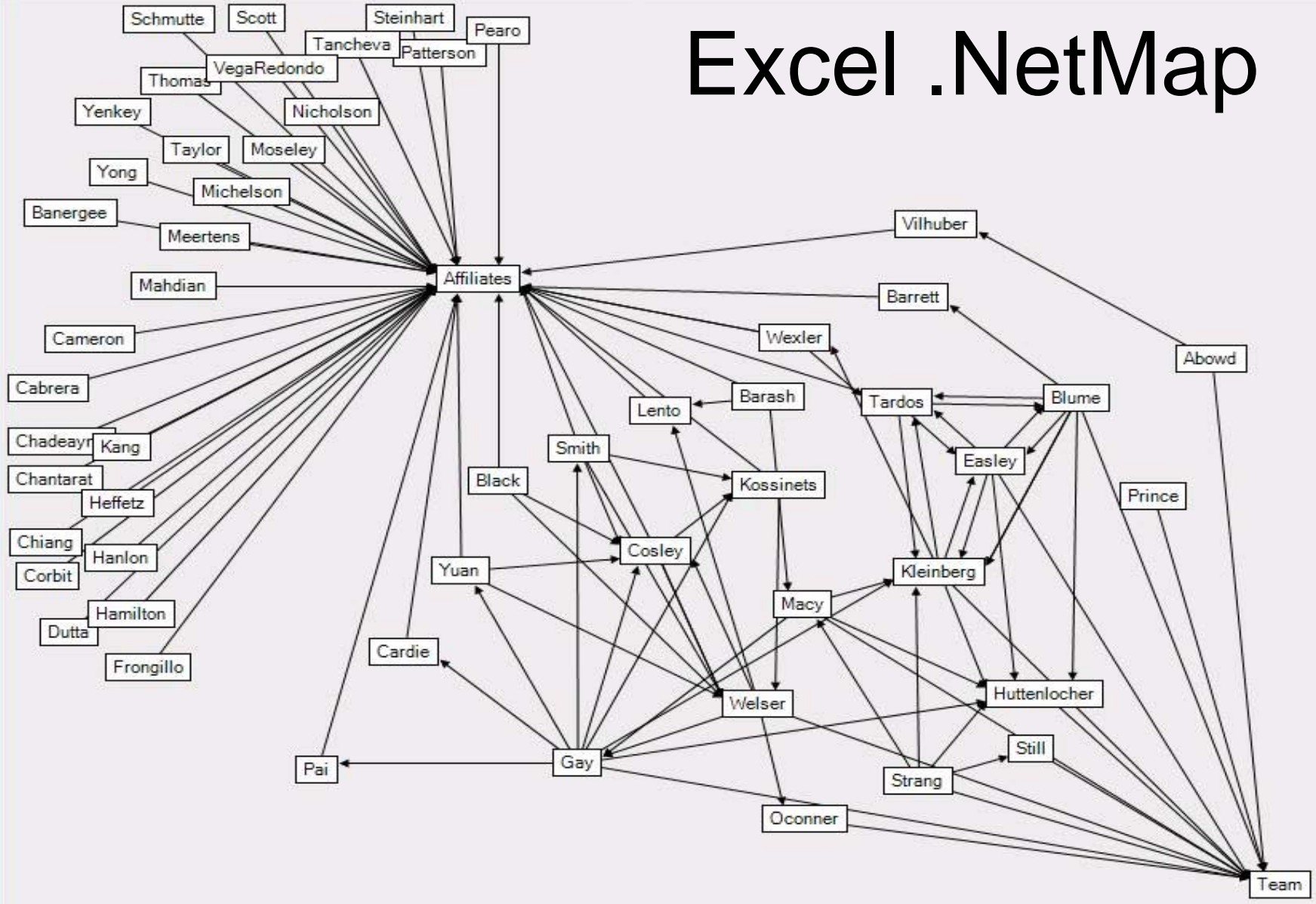
Formula Bar: F3 = Yes

	A	B	C	D	E	F	G	H	I
1	Vertex 1	Vertex 2	Color	Width	Opacity	Visible?			
2	16899266	14258203				Yes			Edges Worksheet

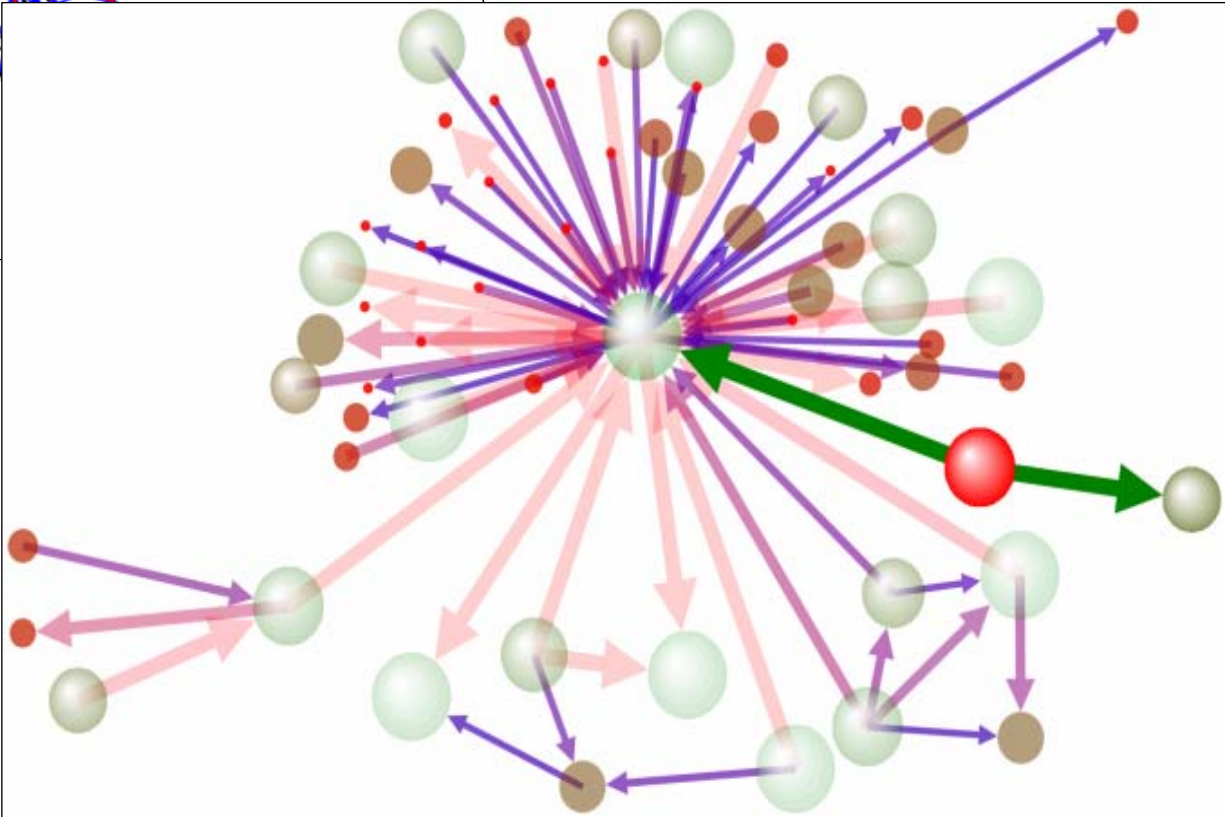
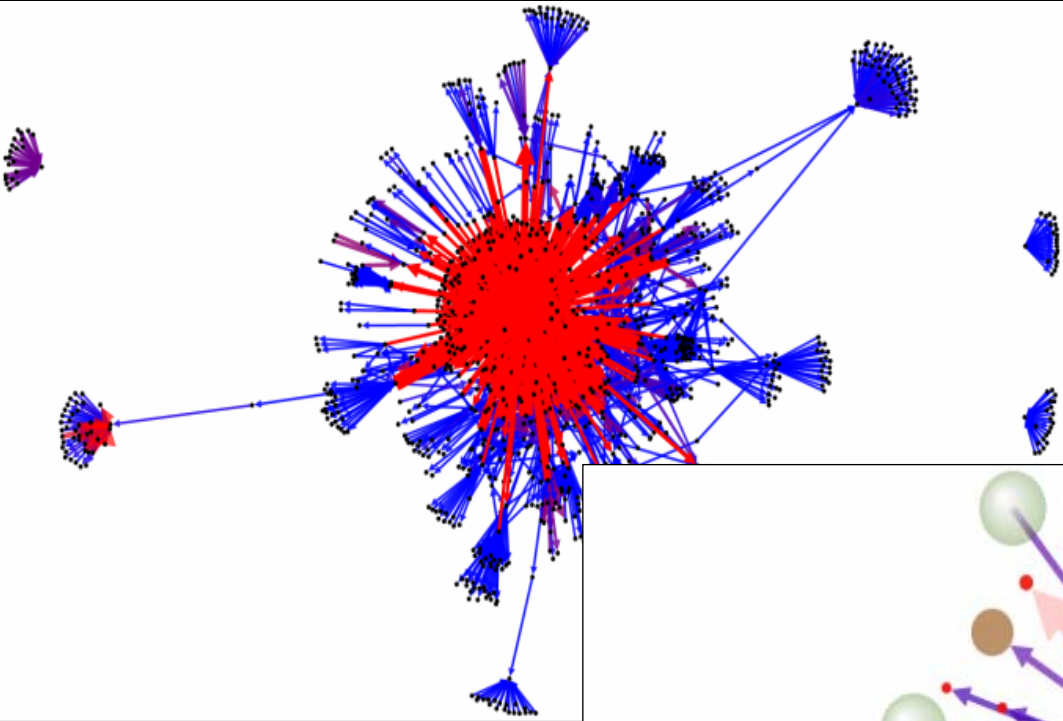
	A	B	C	D	E	F	G	H	I	J	K
1	Vertex	Color	Shape	Radius	Opacity	Image ID	Primary Label	Secondary Label	Tooltip	Visible	
2	16899266		Circle					16899266	16899266		
3	15522825		Circle					15522825	15522825		
4	11305793		Circle					11305793	11305793		
5	42502628		Circle					42502628	42502628		
6	41929652		Circle					41929652	41929652		
7	41901803		Circle					41901803	41901803		
8	41900857		Circle					41900857	41900857		

Vertex Radius
Enter an optional vertex radius between 0.1 and 50.

Excel .NetMap

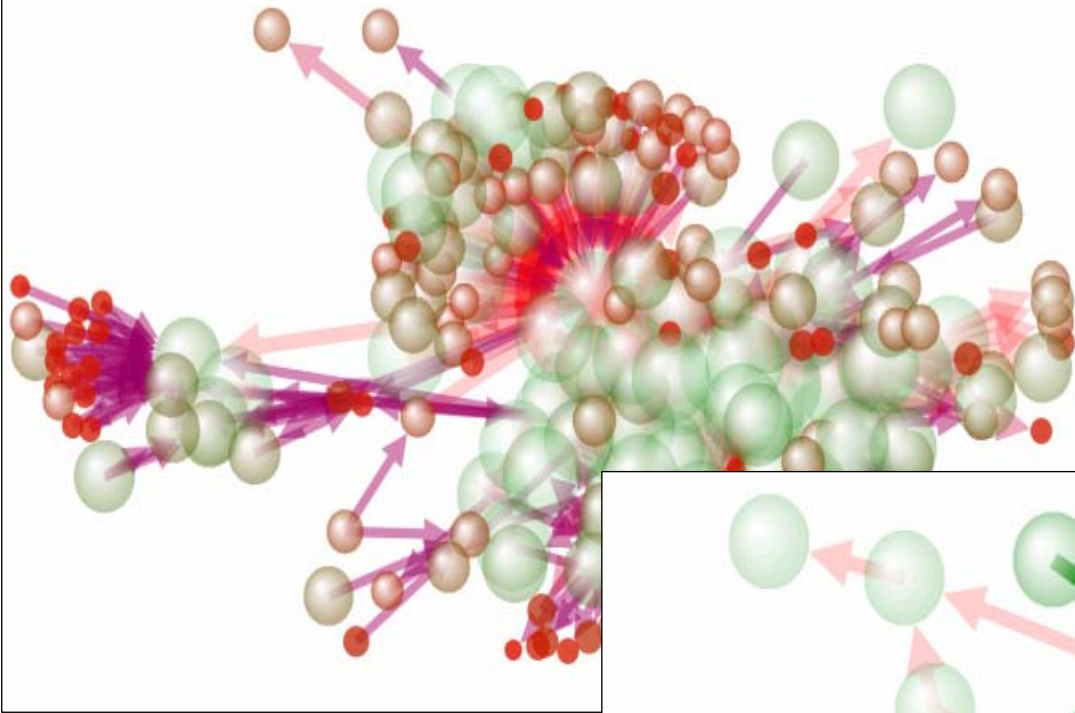


Personal email social networks

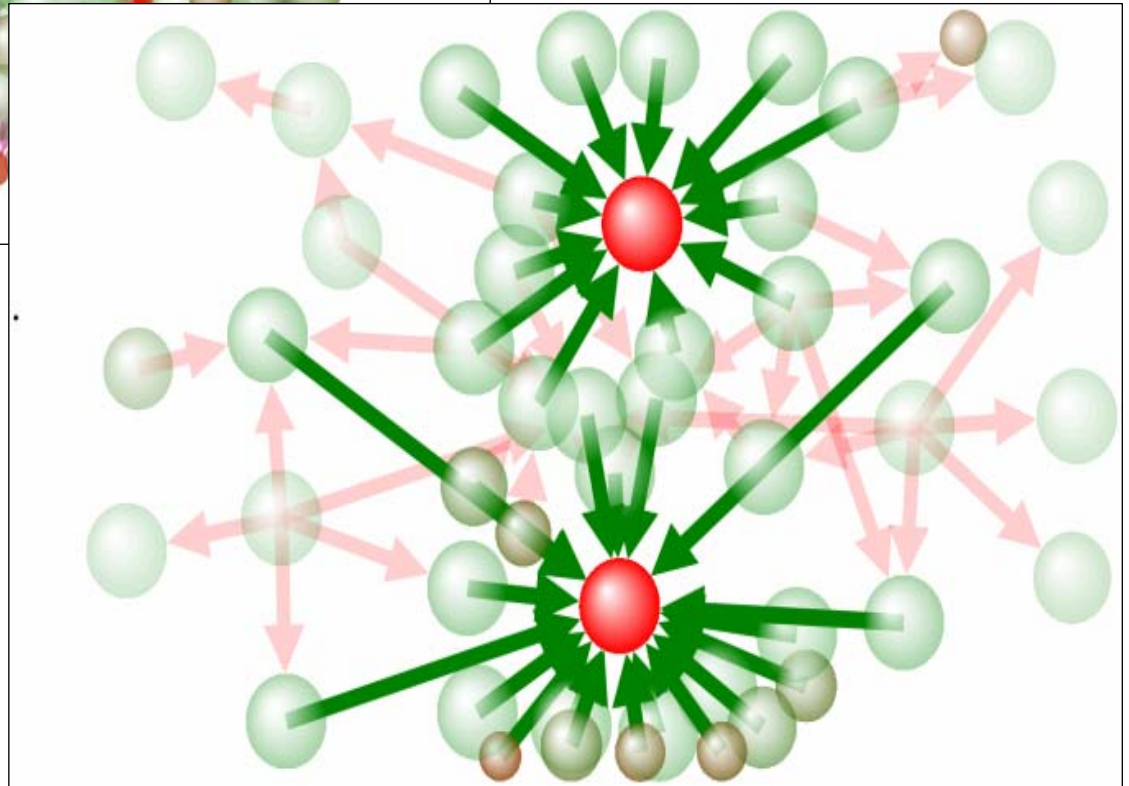


Strong-tie inner cores of email social networks

Email List social networks



Strong Tie Core of an Email List



Goal: Make SNA easier

- Existing Social Network Tools are challenging for many novice users
- Tools like Excel are widely used
- Leveraging a spreadsheet as a host for SNA lowers barriers to network data analysis and display

Social Network Science of Science

Study social network structure of email and web boards of different scientific communities

Sociologist

“What are the structures of communication in scientific discussions?”

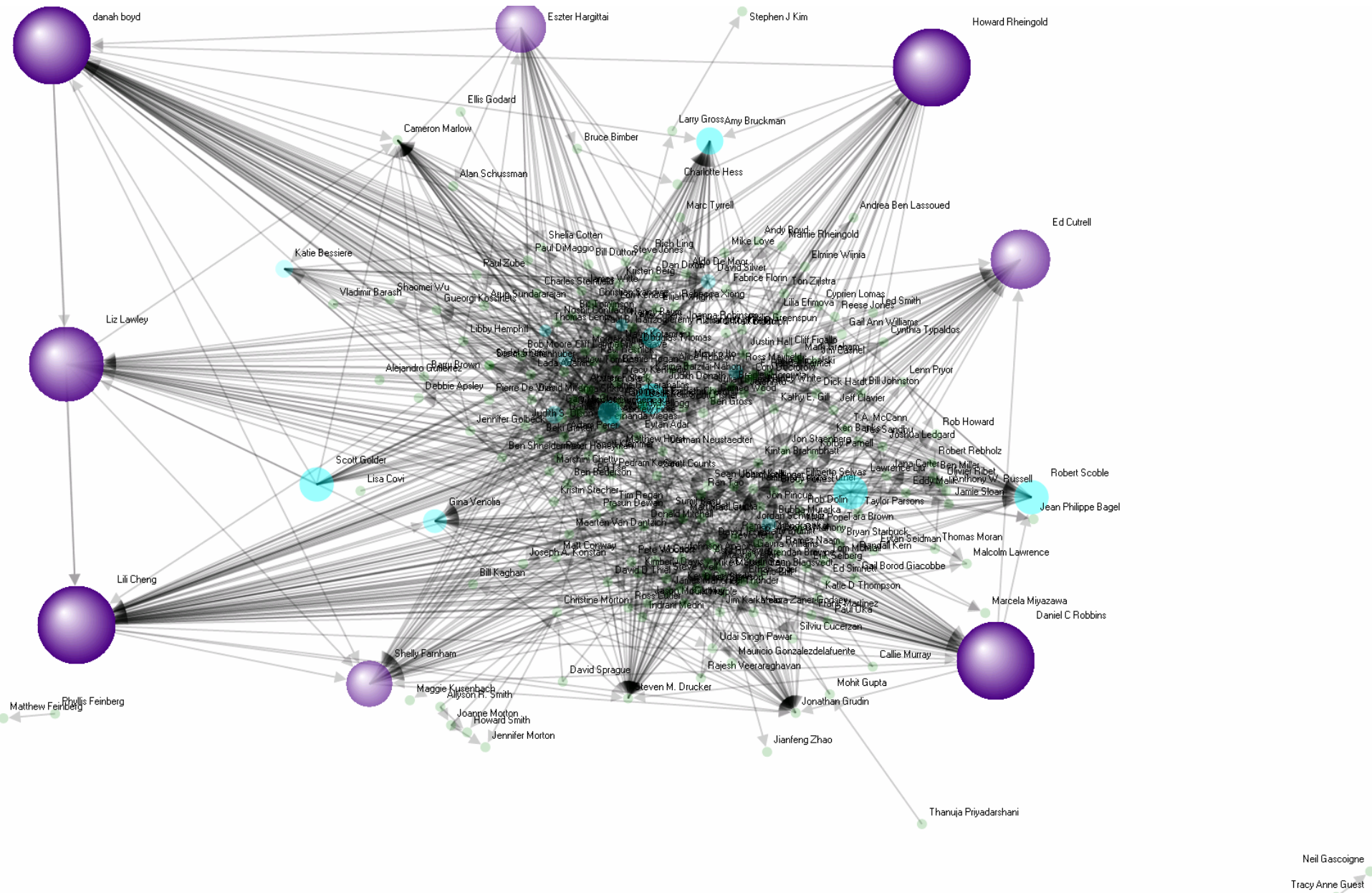
User Experience
Information
Visualization

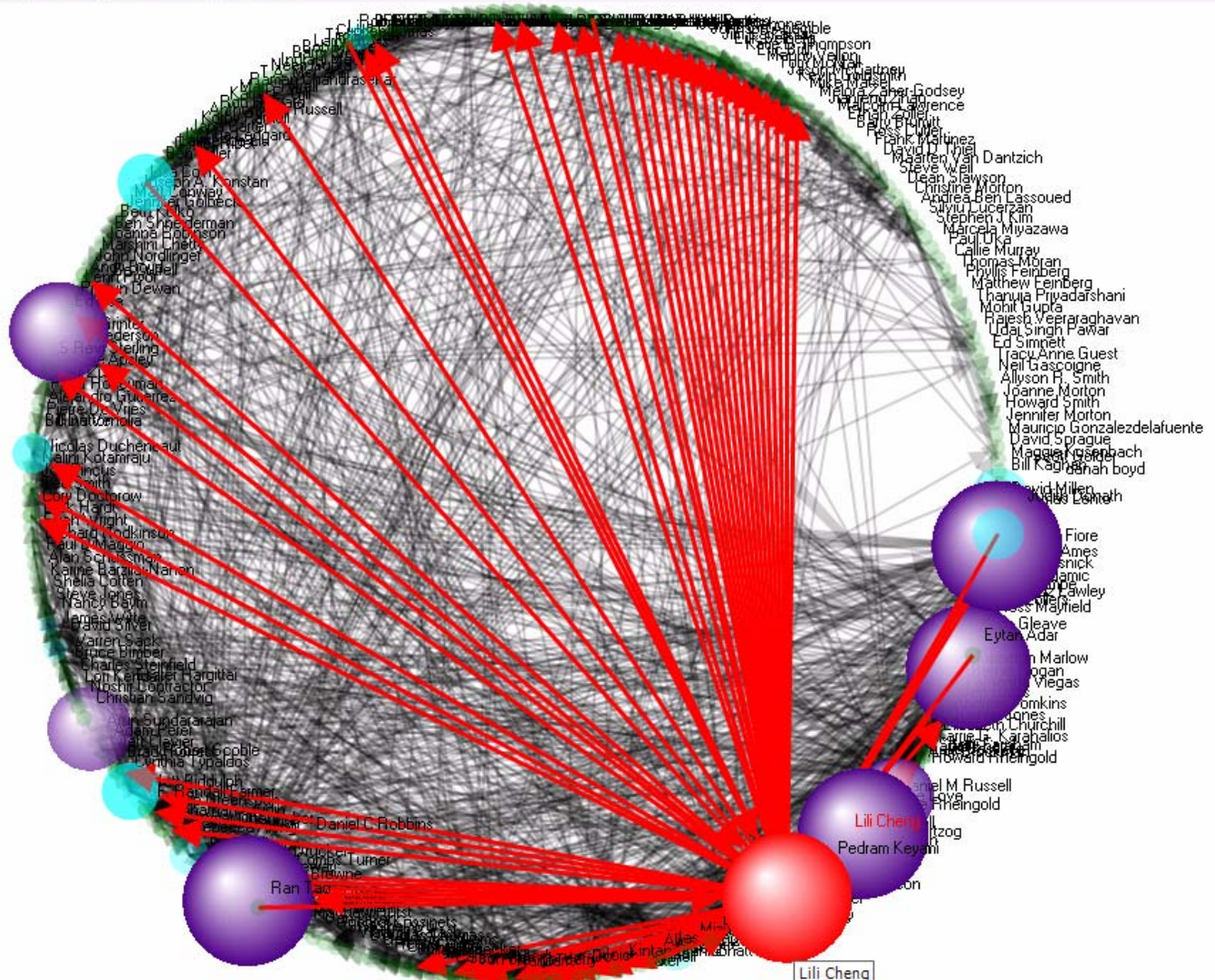
“What are the best UI/UX workflows for network analysis tools?”

Computer Scientist
Algorithmicist for Social
Network Measures

“What are the measures and algorithms needed for understanding networks?”

Marc's Facebook Graph





Lili Cheng

Data

- Overview
- Rank Nodes
- Rank Edges
- Plot Nodes
- Find Communities
- Edge Types
- Details
- Settings

Community

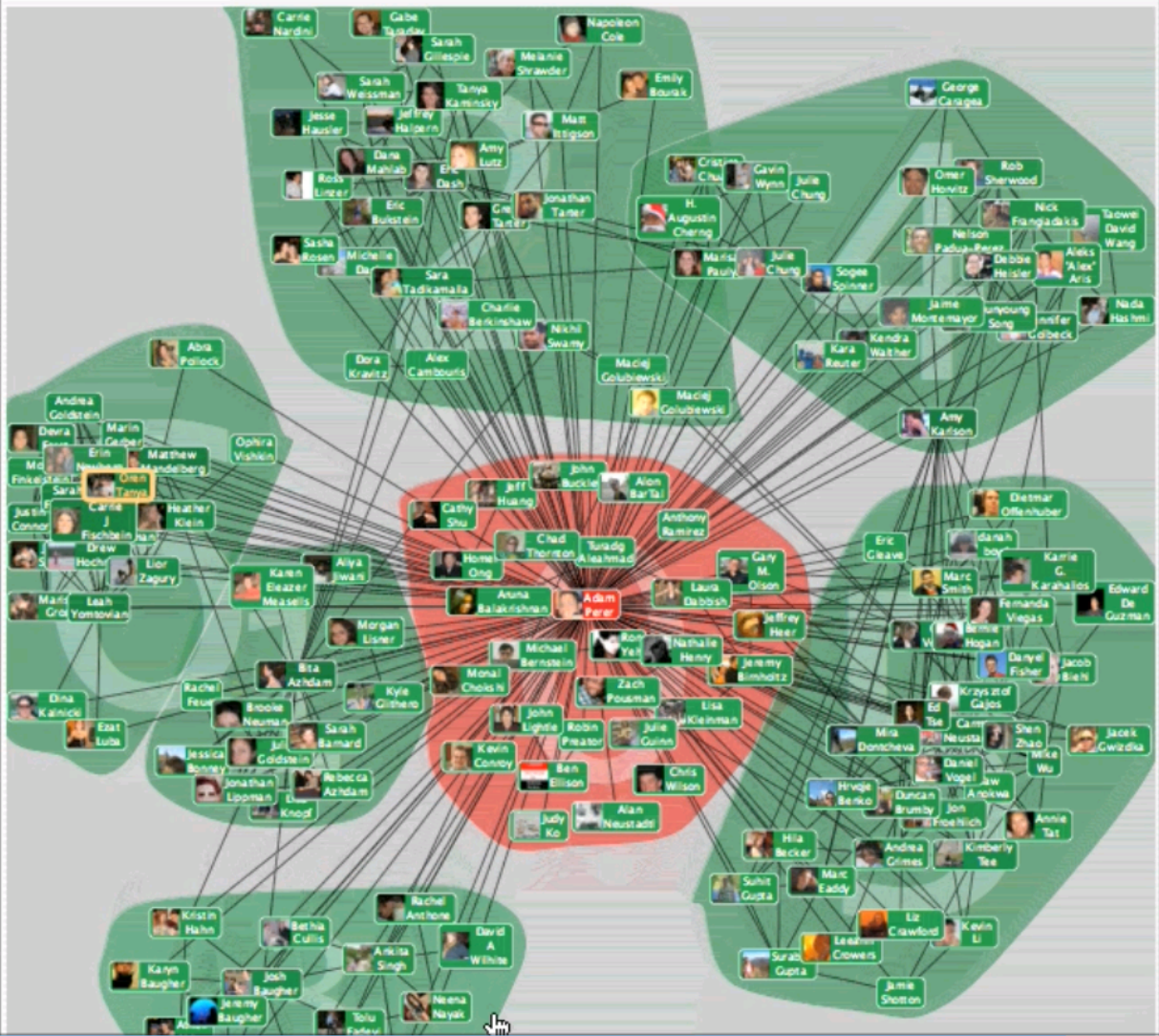
Newman's Community

Disable

ID	Number of Nodes
0	28
1	13
2	27
3	14
4	22
5	34
6	21

Network Visualization

Layout: Font Size: Edge Size: Label Size:



Social Action

Adam Perer

Unselect Table

Show Subgraph ...

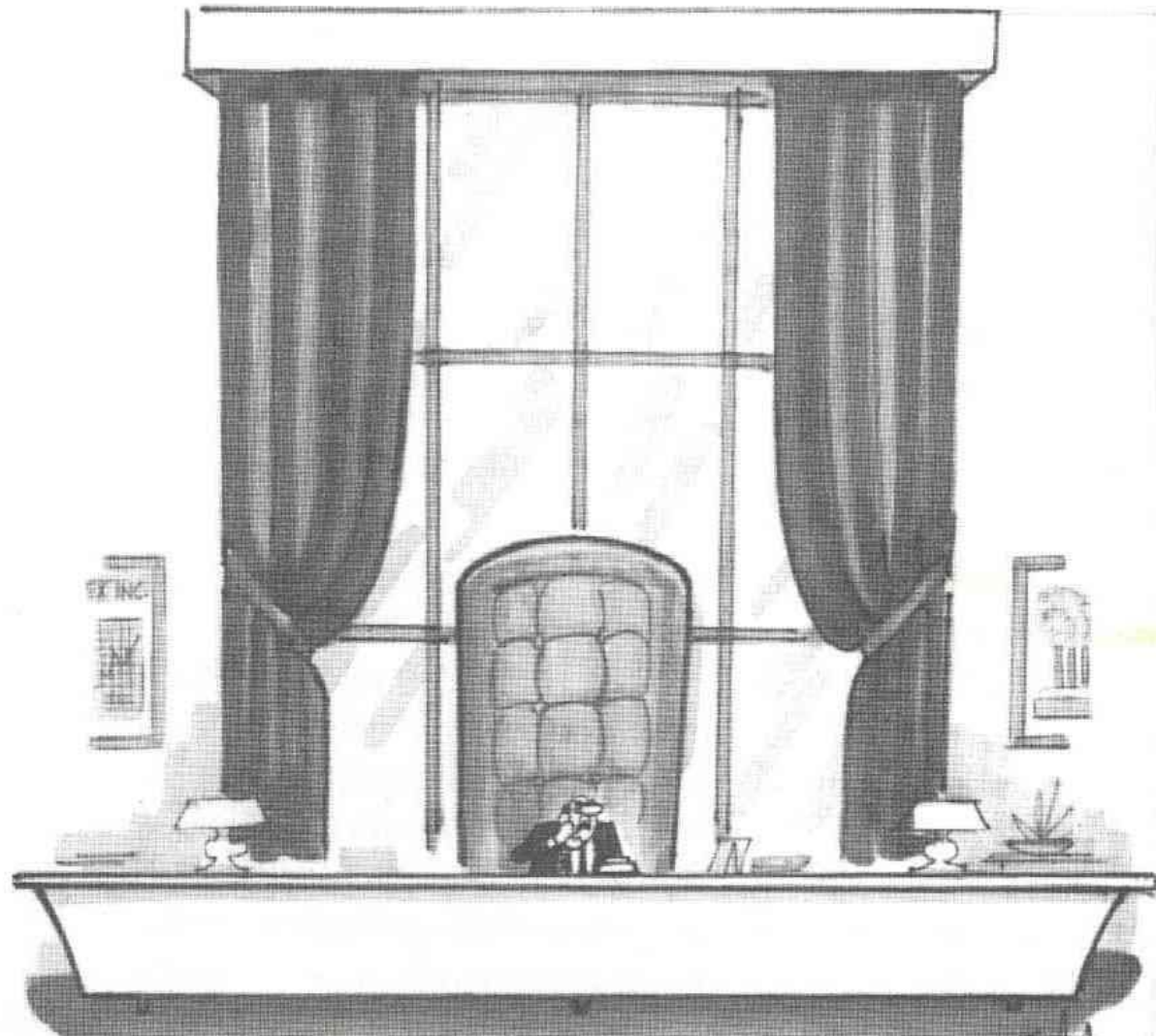
Compress Graph

00:50

Navigation controls including back, forward, and play buttons.



Do you
know who
I am?



“Do you know who you’re talking to, Buster? You’re talking to the guy with the biggest desk, biggest chair, longest drapes, and highest ceiling in the business!”

*Drawing by Dana Fradon; ©1981
The New Yorker Magazine, Inc.*

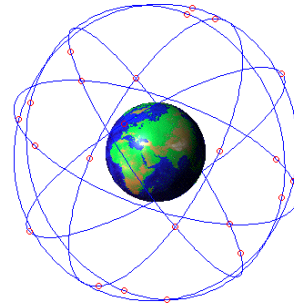
From
“Connections”
by Sara Keisler

SlamXR: Sensors, Routes, Community expand the forms of social media

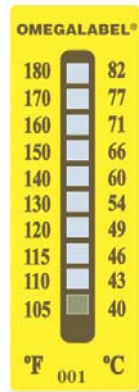


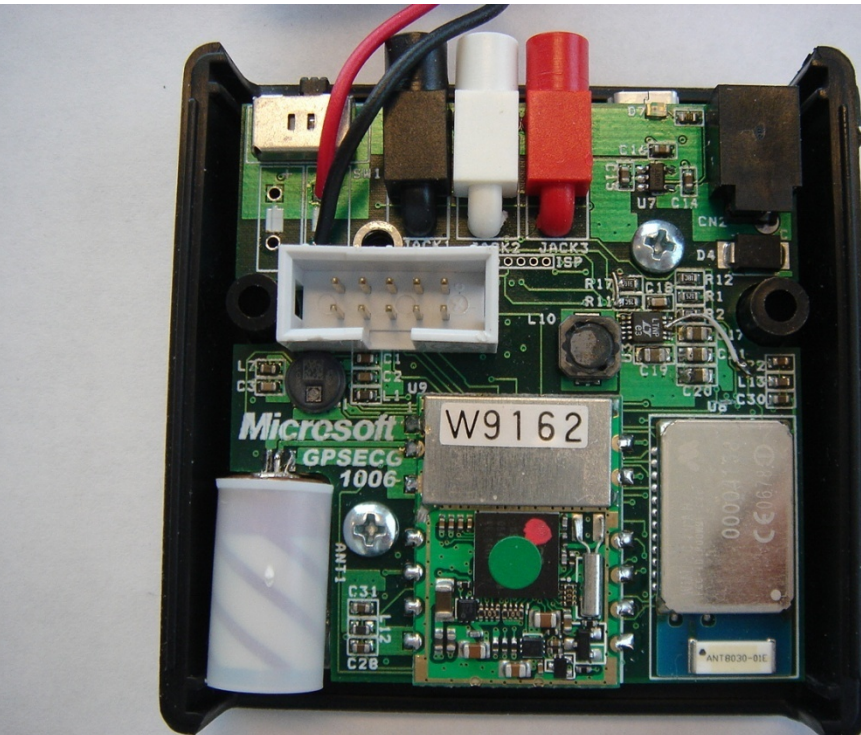
X 2,000,000,000

+



= Lots of routes



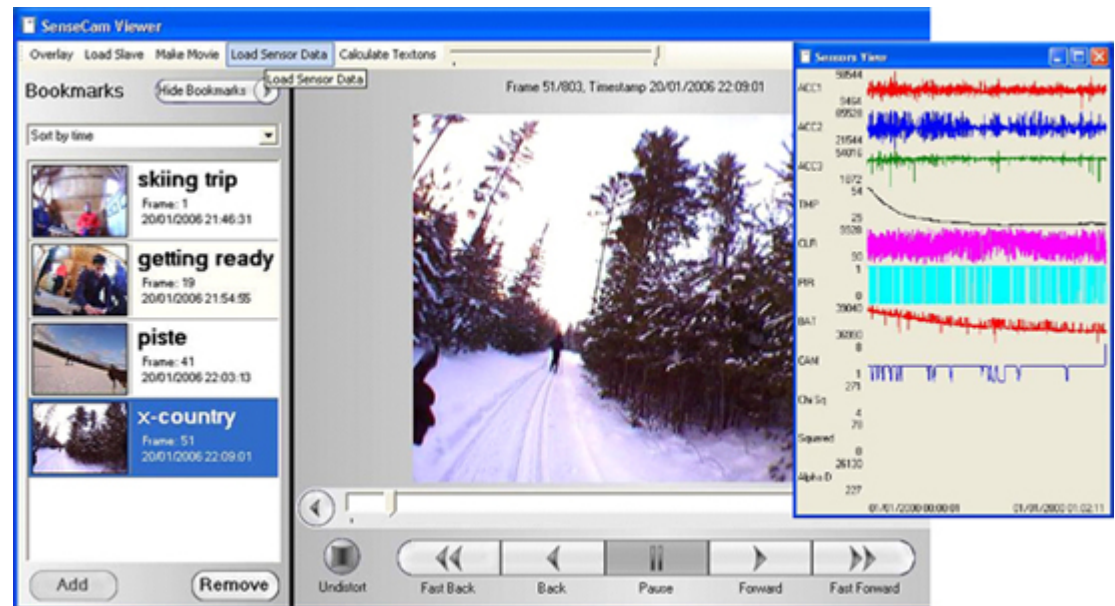
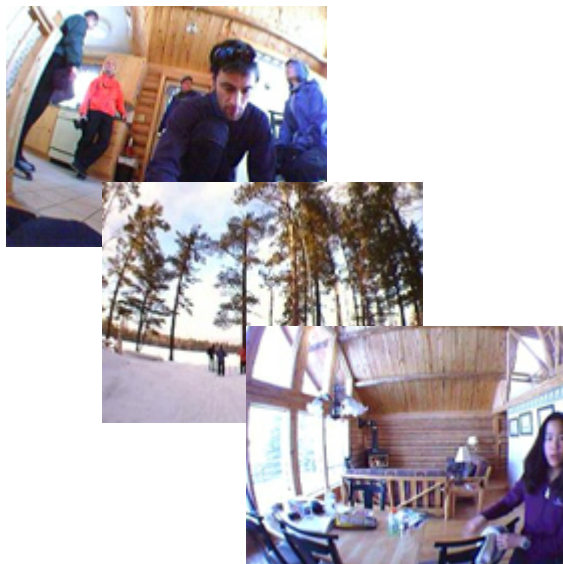


Prototype sensor board that includes GPS, accelerometer, pressure sensor, temperature, Bluetooth, and battery.

SlamXR: Sensors, Routes, Community

Community Aspects: A Sociological Revolution?

SenseCam: Wearable sensors for 'lifelogging' – Microsoft Research, Cambridge



New Tie Granularities

- Named as friends
- Reply to message
- Poke, wave, view image
- “Gift”, “Scrap”, “Ice Cubes”
- Was in the same place
- Laptop is nearby
- Edited same web page
- “Hyperties”:
 - Visit same places (at different times?)

SlamXR by Microsoft Research Community Technologies Group - Microsoft Internet Explorer

Address: <http://www.msslam.com/slamXR/slamxr.htm>

RouteID=82, Device=WM_masmith1, StartTime=20060723204700

WM_counts	20060714162341
WM_Jon	20060714164849
WM_Jon	20060714181035
WM_Jon	20060715155532
WM_counts1	20060716200409
WM_counts1	20060718202412
SmartPhone	20060720200857
AndyJ_Wizard	20060721105620
WM_masmith1	20060721165633
WM_masmith1	20060721181336
WM_masmith1	20060722095918
WM_masmith1	20060722172258
WM_masmith1	20060722191337
WM_masmith1	20060723132817
WM_masmith1	20060723140645
WM_masmith1	20060723204700
WM_masmith1	20060725180516
SmartPhoneNICE	20060726202827
SmartPhoneNICE	20060727090938
SmartPhoneNICE	20060730101653
SmartPhoneNICE	20060730101815
SmartPhoneNICE	20060730102344
SmartPhoneNICE	20060730114410
SmartPhoneNICE	20060730144256
SmartPhoneNICE	20060730144327
Scott	20060730201001
SmartPhoneNICE	20060731181806
AndyJ_Wizard	20060803173234
Scott	20060805133315

SlamSport by MSR CTG
+ indicates GPS fix, digit is number of satellites

00:00:05
00:00:10
00:00:15
00:00:20
00:00:25
00:00:30

Pan Up, Pan Left, Pan Right, Zoom In, Zoom Out, Pan Down

SlamXR by Microsoft Research Community Technologies Group - Microsoft Internet Explorer

Address: <http://www.msslam.com/slamXR/slamxr.htm>

RouteID=82, Device=WM_masmith1, StartTime=20060723204700

WM_counts	20060714162341
WM_Jon	20060714164849
WM_Jon	20060714181035
WM_Jon	20060715155532
WM_counts1	20060716200409
WM_counts1	20060718202412
SmartPhone	20060720200857
AndyJ_Wizard	20060721105620
WM_masmith1	20060721165633
WM_masmith1	20060721181336
WM_masmith1	20060722095918
WM_masmith1	20060722172258
WM_masmith1	20060722191337
WM_masmith1	20060723132817
WM_masmith1	20060723140645
WM_masmith1	20060723204700
WM_masmith1	20060724085656
WM_masmith1	20060725180516
SmartPhoneNICE	20060726202827
SmartPhoneNICE	20060727090938
SmartPhoneNICE	20060730101653
SmartPhoneNICE	20060730101815
SmartPhoneNICE	20060730102344
SmartPhoneNICE	20060730114410
SmartPhoneNICE	20060730144256
SmartPhoneNICE	20060730144327
Scott	20060730201001
SmartPhoneNICE	20060731181806
AndyJ_Wizard	20060803173234
Scott	20060805133315

SlamSport by MSR CTG
+ indicates GPS fix, digit is number of satellites









00:00:05
00:00:10
00:00:15
00:00:20
00:00:25
00:00:30
00:00:35
00:00:40
00:00:45
00:00:50
00:00:55
00:01:00
00:01:05
00:01:10
00:01:16
00:01:21
00:01:26
00:01:31
00:01:36
00:01:41
00:01:46

Pan Up, Pan Left, Pan Right, Zoom In, Zoom Out, Pan Down

SLAM XR

Scott Counts, Marc Smith, Jianfeng Zhang, Nuria Oliver, Andy Jacobs

Tag Search: [Clear](#) [Options](#)

-  1 - 7
-  **Route 344:** Pocket_PC (05/08/07)
2.534 Mi. 01:17:40
-  **Route 125:** WM_masmith1 (08/19/06)
13.19 Mi. 02:57:55
-  **Route 82:** WM_masmith1 (07/23/06)
64.07 Mi. 01:49:47
-  **Route 75:** WM_masmith1 (07/22/06)
3.527 Mi. 00:17:46
-  **Route 71:** WM_masmith1 (07/22/06)
24.60 Mi. 01:01:44
-  **Route 66:** WM_masmith1 (07/21/06)
2.865 Mi. 00:14:40
-  **Route 65:** WM_masmith1 (07/21/06)
0.115 Mi. 00:03:21

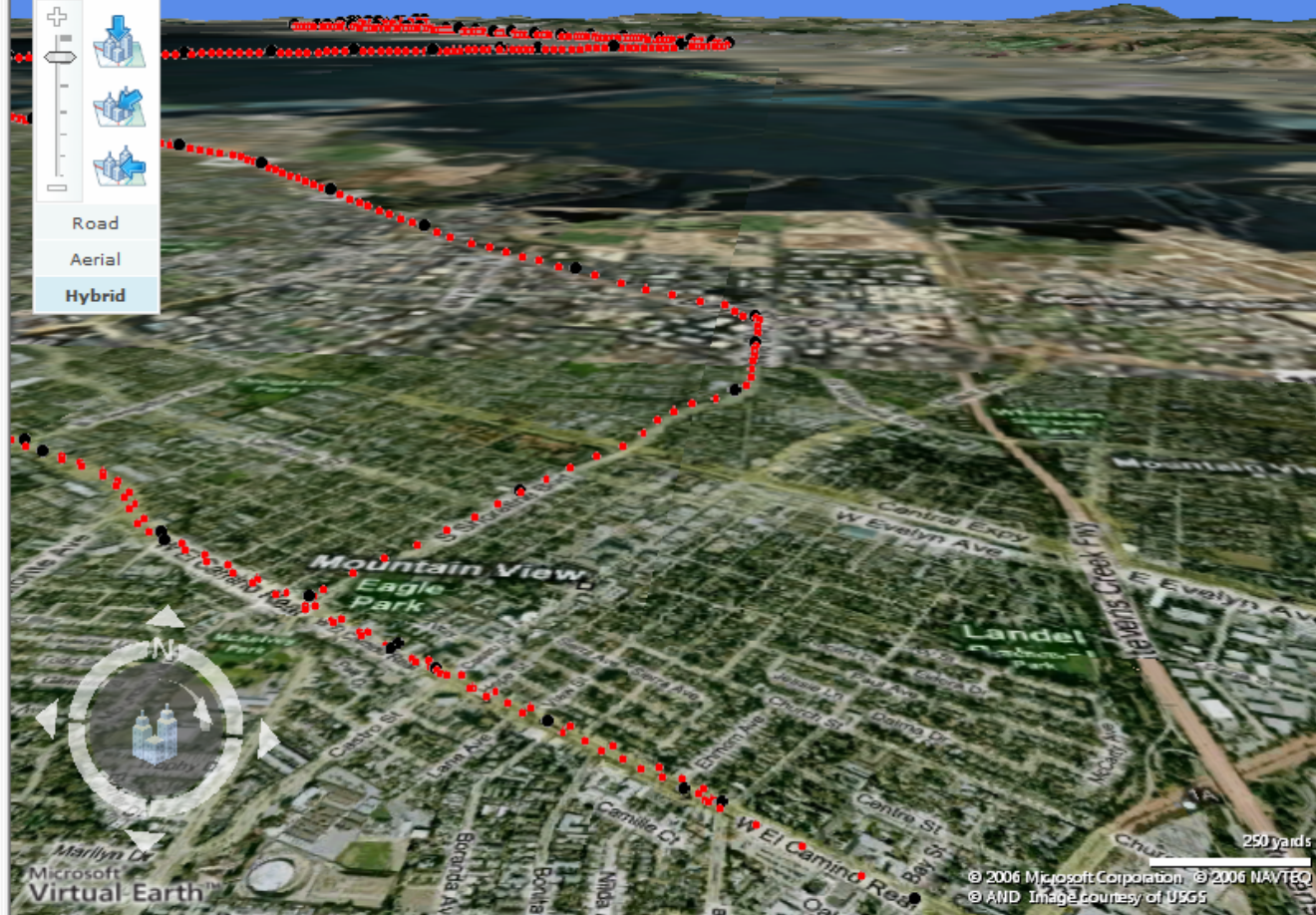
Route 82 tags: marc

Line Style: **Dashed** Solid Code by: None speed alt altdiff

2D 3D



Road
Aerial
Hybrid



Distance (miles):

Total: 64.07 Uphill: 7.351 Downhill: 8.326 Flat: 48.39

Time:

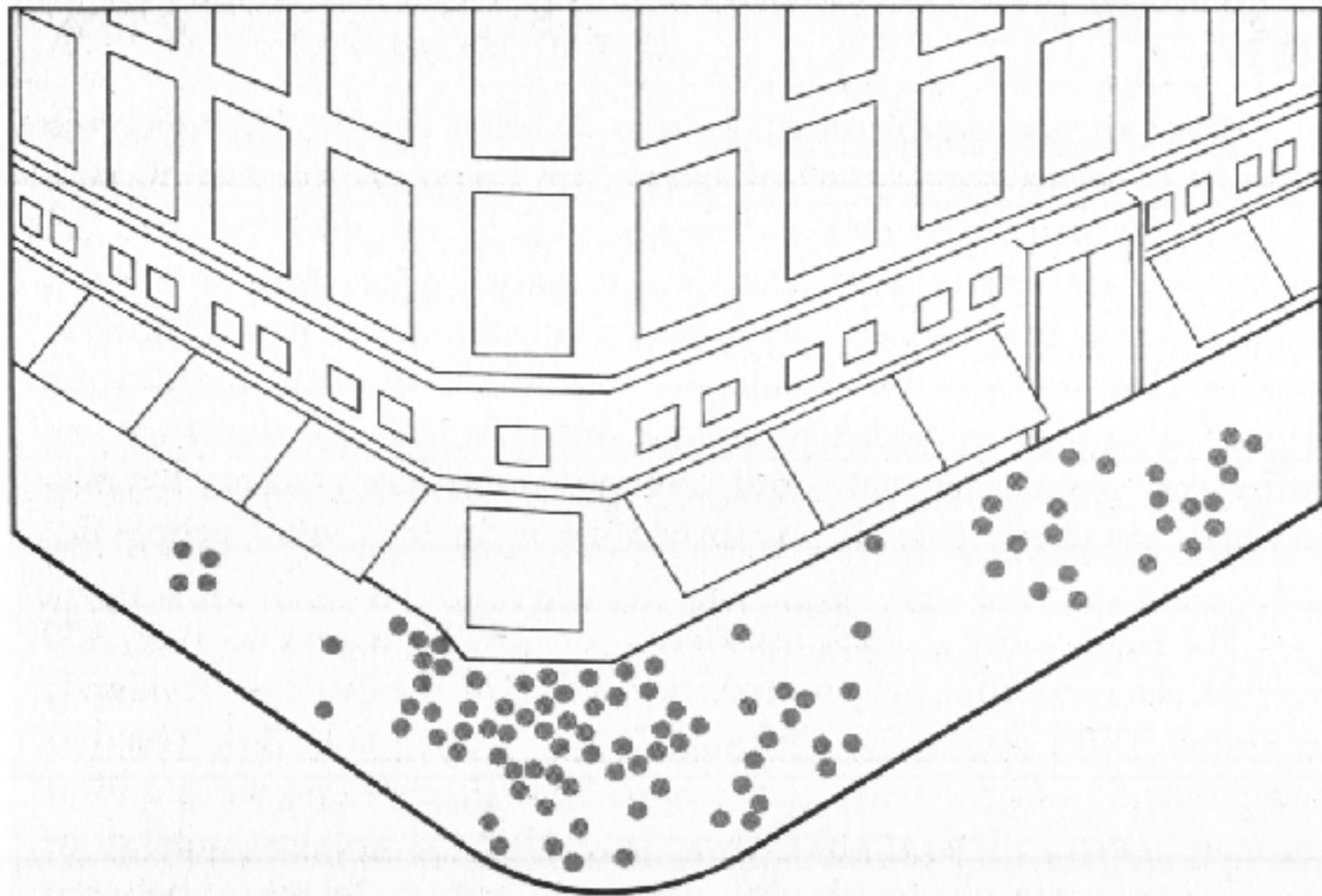
Total: 01:49:47 Moving: 71.5

Altitude (meters):

Up: 387.2 Down: -423

Speed (mph):

Average: 53.76 Up: 60.14 Down: 58.77 Flat: 52.16



Location of street conversations lasting two minutes or more at Saks Fifth Avenue and Fiftieth Street. Cumulative for five days in June. Note main concentration at corner, secondary one outside entrance.

Explicit vs. implicit “reputation systems”

Explicit

Statements about behaviors and relationships

- eBay
- Amazon
- Slashdot
- Digg
- MySpace
- Facebook
- YouTube
- flickr

Issues:

- Provisioning: not enough rating
- Latency: ratings not fast enough
- Bias: susceptible to initial reactions
- Collusion: easily “shilled”
- Inflation: disincentives to accuracy

Implicit

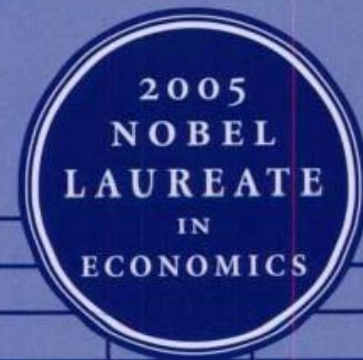
Observations about behaviors and relationships

- Google
- Amazon
- Flickr, MySpace, Facebook
- del.icio.us
- Technorati
- Netscan

Issues:

- Ambiguity: Behavior is not endorsement
- Collusion: Subject to manipulation
- May be subject to “herding” or positive-feedback loops

People *can* often concert their intentions or expectations with others if each knows that the other is trying to do the same. Most situations — perhaps every situation for people who are practiced at this kind of game — provide some clue for coordinating behavior, some focal **point** for each person's expectation of what the other expects him to expect to be expected to do.



Social media create
Electronic Schelling Points

THE STRATEGY OF CONFLICT

With a new Preface by the author

THOMAS C. SCHELLING