

Social Computing

Where the Human Intelligence and Computing Technologies Meet

PhD Summer School 2011

Cambridge, June 28, 2011

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Microsoft Research

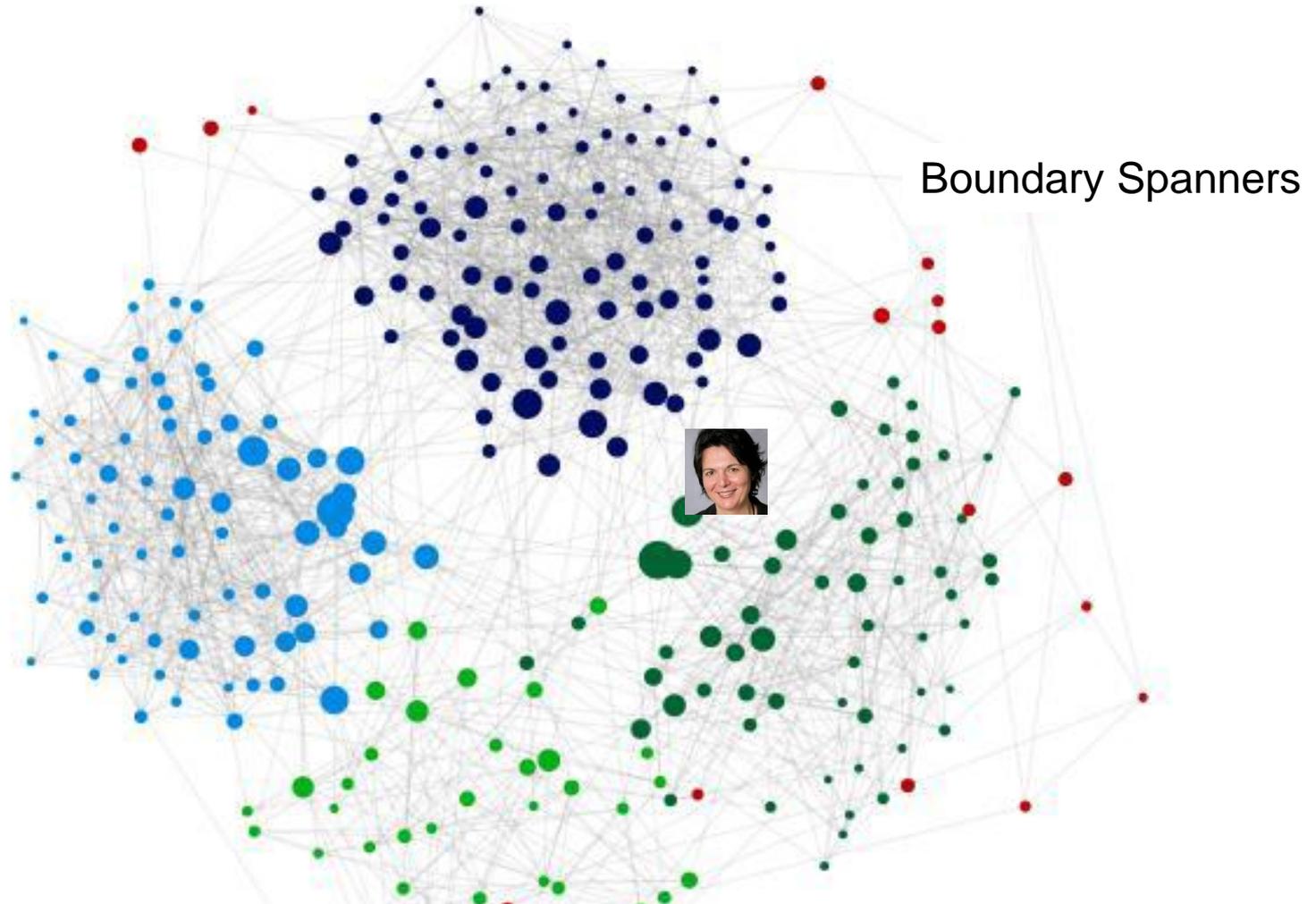
Social computing refers to activities, systems, and environments where individuals use technology to engage socially and computationally.

Topics of Interest

Technology designs and social phenomena that drive and affect social computing

Methods, techniques, and tools to study and possibly control these phenomena.

Life after PhD



"Penguins, Camels, and Other Birds of a Feather: Brokerage, Boundary Spanning, and Leadership in Open Innovation Communities". Lee Fleming and David M. Waguespack, April 8, 2005



The power of computing technology enables social interaction.



The power of human 'computing' is channelled through technology.

People are attracted to other people

The screenshot shows a Facebook news feed for user Bernie Hogan. The top navigation bar includes the Facebook logo, a search bar, and links for Home, Profile, and Account. The left sidebar lists navigation options: News Feed, Messages (9), Events (3), Photos, Friends (8), Applications, Games, Groups (21), and Marketplace (31). The main news feed area shows a post by Jane Smith: "Canada gets the Gold in Hockey. Yeah GOLD!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!" with 6 likes and 4 comments. Below it is a notification for John Doe: "John Doe was tagged in a photo. Someone's Birthday". The next post is by Bernie Hogan: "NodeXL is the greatest thing since sliced bread, except Canada's Olympic showing, of course. That was similarly impressive. This is not a real comment, btw." with 4 comments. The comments section shows John Doe replying: "Indeed, NodeXL is great, but why fake comments?" and Bernie Hogan replying: "Because this is Facebook and it is semi-private. I didn't think it was appropriate to include them when instead I can have this meta-conversation about Facebook's privacy." The right sidebar contains sections for Requests (7 friend requests, 3 event invitations, 1 friend suggestion, N*N other requests), Suggestions (Mr. Splashy Pants, Command & Conquer), and a Sponsored advertisement for Nokia X6 for £15 a month.

500 M
registered users

Role playing in the virtual world: practicing exchange and reciprocity



People play !



The screenshot shows the Steam store interface. At the top, there are navigation links for STORE, LIBRARY, NEWS, and COMMUNITY. Below this is a search bar and tabs for FEATURED ITEMS, GENRES, DEMOS, VIDEOS, and MAC. The main content area features a large banner for 'EMPIRE & NAPOLEON TOTAL WAR GAME OF THE YEAR EDITION' and a 'Spotlight' section for 'MAGIC: The Gathering'. Below the banner, it says 'Now Available' and 'Comprising the award winning Empire: Total War™ and its sequel GOTY Edition covers over a century of epic wars and revolution'. At the bottom, there are tabs for 'FEATURED PC GAMES' and 'FEATURED MAC GAMES', and a '+ ADD A GAME...' button.

Between 1.4M and 2.6M players at any moment in time.





Steam View Friends Games Help

← → STORE LIBRARY NEWS **COMMUNITY**

http://steamcommunity.com/profiles/76561198006695263

|||WOLVES|||Evan-|||Gen|||

Profile ...

Evan is Almighty!!!
Evan Fraying
Cambridge, Cambridgeshire, United Kingdom (Great Britain) 旗

TOTAL WAR SERIES FTW!

Comments ...

Post a comment here...

Delete Piggy posted on August 29, 2010 @ 8:01pm
we need to have a rematch in halo. But this time i go hard :)

Delete |||Wolves|||Storyteller-Beth posted on August 13, 2010 @ 12:23am
hi
just do you know, i don't think- i can start chats :>xxx

View all 2 comments

Groups ...

THE WOLVES CLAN

26 Members | 2 In-Game | 8 Online | 0 In Group Chat

'WE DON'T KNOW WHAT FEAR IS'

+ ADD A GAME...

Steam Group

THE WOLVES CLAN (WOLVES)

Profile ...

'WE DON'T KNOW WHAT FEAR IS'

26 Members | 2 In-Game | 8 Online | 0 In Chat
Since April 9, 2010

THE WOLVES CLAN is currently an Rome Total War based clan. Malfred is the leader of WOLVES. Our allies are the Antiquae and Greek clans. We are primarily a 3TK clan but occasionally play on other money levels such as 15K, 20K and 25K.

WOLVES has grown to be one of the most successful Rome Total War clans. It has won a number of tournaments, clan wars and trained up many players who now have extremely high skill levels and have set up their own clans.

THE WOLVES CLAN remains the most influential clan in Rome Total War today.

Friends

|||WOLVES|||Evan-|||Gen||| Online
Community Home

— FRIENDS 2 IN GAME, 12 ONLINE

- 30th_RGL_Cpl_The_Dane In-Game
Mount and Blade: Warband
- :nG:: MacMac In-Game
Team Fortress 2
- ccam Online
- King Away
- Sadanaga Online
- The-Legend Online
- |||WOLVES|||Aurelian Online
- |||WOLVES|||Highlander Online
- |||WOLVES|||Malfred Online
- |||WOLVES|||Marcel-Gen Away
- |||Wolves|||Storyteller-Beth Online
- }Arcanif_SloppyFro/Cpl

+ ADD A FRIEND...

User profile.
Online status for all the friends and chat capability.
Users form clans, with strict organizational structure.

XBOX
LIVE

Real time communication through live audio.



No job is too small, especially if you can do it from your living room

Mechanical Turk is a marketplace for work.

We give businesses and developers access to an on-demand, scalable workforce. Workers select from thousands of tasks and work whenever it's convenient.

129,713 HITs available. [View them now.](#)

Make Money
by working on HITs

HITs - *Human Intelligence Tasks* - are individual tasks that you work on. [Find HITs now.](#)

As a Mechanical Turk Worker you:

- Can work from home
- Choose your own work hours
- Get paid for doing good work

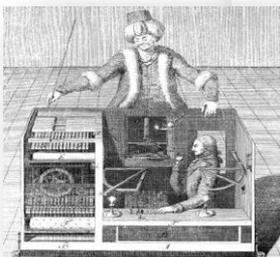
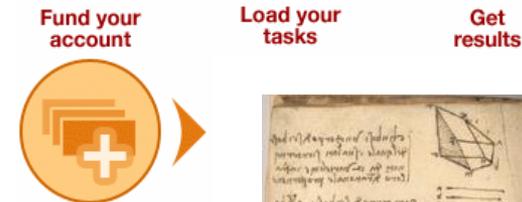


Get Results
from Mechanical Turk Workers

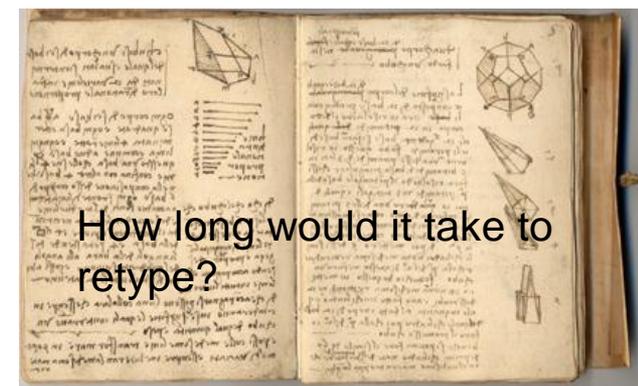
Ask workers to complete HITs - *Human Intelligence Tasks* - and get results using Mechanical Turk. [Register Now](#)

As a Mechanical Turk Requester you:

- Have access to a global, on-demand, 24 x 7 workforce
- Get thousands of HITs completed in minutes
- Pay only when you're satisfied with the results



The Turk, chess playing machine, 18th century, Wolfgang von Kempelen.



How long would it take to retype?

People join up for a common good



WIKIPEDIA
The Free Encyclopedia

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 - [العربية](#)
 - [Español](#)
 - [Hrvatski](#)
 - [Bahasa Melayu](#)
 - [日本語](#)

[New features](#) [Log in / create account](#)

Article [Discussion](#) [Read](#) [View source](#) [View history](#)

List of social networking websites

From Wikipedia, the free encyclopedia

This is a **list of major active social networking websites** and excludes dating websites (see [List of online dating websites](#)). For defunct social networking websites, see [List of defunct social networking websites](#).

Please note the list is not exhaustive, and is limited to notable, well-known sites.

| Name ▲ | Description/Focus ▾ | Date launched ▾ | Registered users ▾ | Registration ▾ | Global Alexa ^[1] Page ranking ▾ |
|--------------------------------|---|------------------------------|---------------------------------|--|---|
| Advogato | Free and open source software developers | | 13,575 ^[2] | Open | 128,340 ^[3] |
| Amie Street | | 2006 | | Open | 24,784 ^[4] |
| ANobii | Books | | | Open | 10,734 ^[5] |
| AsianAvenue | A social network for the Asian American community | 1997 | | Open | |
| aSmallWorld | European jet set and social elite world-wide | | 550,000 ^[6] | Invite-only | 8,583 ^[7] |
| Athlinks | Running, Swimming | | 68,496 ^[8] | Open | 73,295 ^[9] |
| Audimated.com | Independent music | 2010 | | Open | 25,648 ^[10] |
| Avatars United | Online games | March 2008 | | Open | 294,575 ^[12] |
| Badoo | General, Meet new people, Popular in Europe and LatAm | | 69,000,000 ^[13] | Open to people 18 and older | 135 ^[14] |
| Bebo | General | July 2005 | 117,000,000 ^[15] | Open to people 13 and older | 905 ^[16] |
| Bigadda | Indian Social Networking Site | | 3,000,000 ^[17] | Open to people 16 and older | 3,176 ^[18] |
| BigTent | Organization and communication portal for groups | | | Open to people 18 and older (13-18 parental permission encouraged) | 34,047 ^[19] |
| | | 2005-06-01 | 430,000 ^[20] | Requires Norwegian phone number | 65,176 ^[21] |
| | | 1999-09-01 | 20,000,000 ^[22] | Open | 2,350 ^[23] |
| | | | 85,579 ^[24] | Open | 23,485 ^[25] |

Collected information on 193 Social Networking Web Sites

http://en.wikipedia.org/wiki/List_of_social_networking_websites

YAHOO! ANSWERS



cenbrianhouse
home of crowdsourcing



COMMUNITY SITES

Yahoo! Answers

Ask

Wikipedia

CROWDSOURCING

Digg

Mechanical Turk

SOCIAL SITES

LinkedIn

Facebook



amazonmechanical turk
beta Artificial Intelligence



MEDIA SHARING

YouTube

Flickr

Delicious

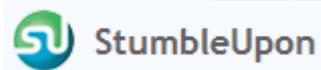
Stumblupon

ONLINE GAMES

xBox Live

Steam

CrowdSpirit
Electronic Products Crowdsourcing



ENGAGEMENT: *Social network vs. managed crowdsourcing service*

INCENTIVES: *Social rewards vs. pay*

concepts and techniques

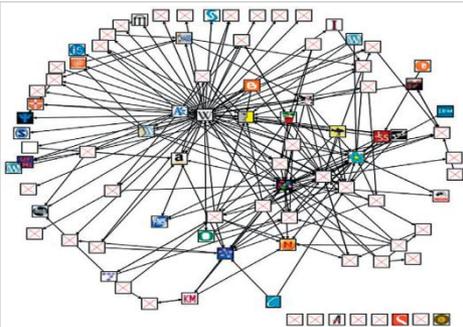
SOCIAL NETWORKS AND ANALYSIS

What are Social Networks?



Sociologists

Network of individuals connected through social ties.



Computer scientists

Graph structure that emerges from the social interaction among individuals.

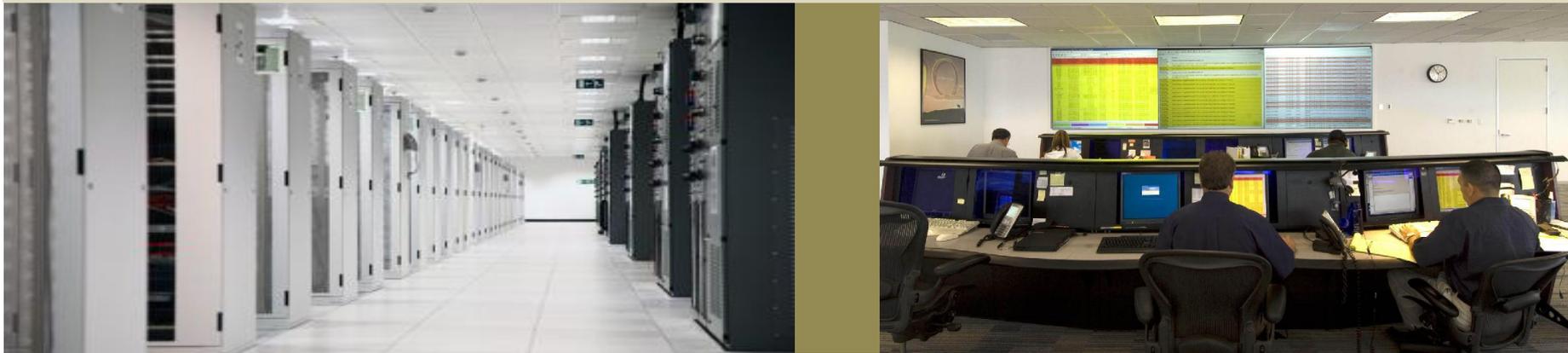
The graph may be related to explicit or implicit relationships between individuals and objects involved in the interaction.

Engineering the Social Platforms

Social Network



Technology Infrastructure and Support



Computing Infrastructure

<http://www.vaqueronet.com/colocating.php>
<http://www.toptechreviews.net/tech-news/facebook-users-to-delete-their-fb-account/>

Service Operations

<http://www.alpheuscommunications.com>
<http://mashable.com/2009/04/30/facebook-friends-page/>
<http://www.abc.net.au/news/stories/2010/02/18/2823937.htm>

What is the *health* of a community?

How do we define health indicators?

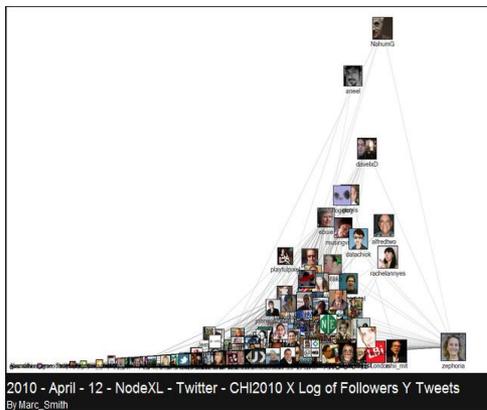
Without clear indicators it is not possible to measure the effectiveness of the designs and increase the utility of the service.



We need tools and methods, not only for engineers but for domain experts who can use computational tools to analyze and interpret social phenomena.

Challenge: Support for Exploratory Analysis

TWITTER NodeXL Graph

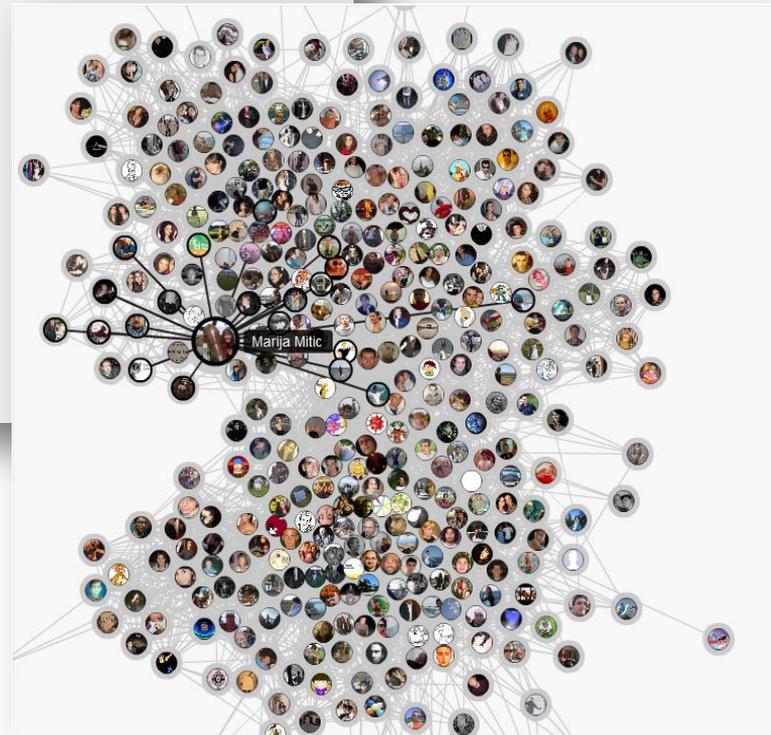


- How to produce human-readable visual representations?
- How to connect the computational methods and graph metrics with visual characteristics of networks?
- How to develop the vocabulary and concepts that users can use to communicate about networks?

A. Perer and B. Shneiderman, “[Integrating statistics and visualization: Case studies of gaining clarity during exploratory data analysis](#),” in CHI '08: ACM, 2008.

Network graphs are not for everyone?

The screenshot shows a web browser window with the address bar displaying "Facebook Social Graph | MIH SWAT". The page header features the "SWAT LABS" logo and navigation links: "Home", "About SWAT", "Blog", "Labs", "Jobs", and "Contact". Below the header is a search bar and social media icons for Facebook, Twitter, YouTube, and RSS. The main content area is titled "Facebook Social Graph" and includes the subtext "Explore your social graph to discover social clusters and photo friends on Facebook." A link to "Return to SWAT Labs homepage" is visible. The central part of the page displays a network graph with several clusters highlighted in pink. At the bottom of the graph area, there are social sharing buttons for "Tweet" (23) and "Like" (127), along with "GET SUPPORT" and "GO TO WEBSITE" buttons.



NodeXL Projects

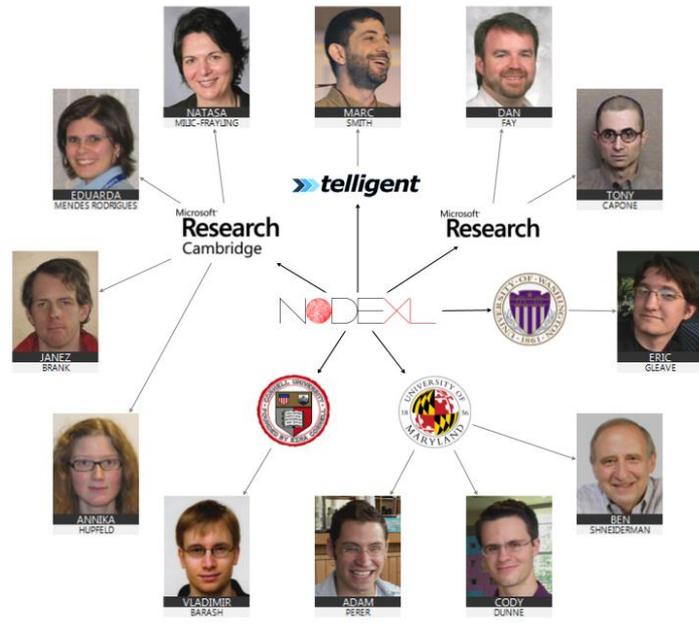
Extension for Excel that provides graphing and analysis of graph data

NodeXL project is collaboration with universities and industry, funded by Microsoft Research Connections team

<http://research.microsoft.com/en-us/projects/nodexl/>

Source code and is available on the Codeplex, under the Microsoft Open Source License

<http://www.codeplex.com/NodeXL>



Senate_Raw_tutorial - Microsoft Excel non-commercial ...

Table Tools

Home Insert Page Layout Formulas Data Review View NodeXL Design

Graph Type: Undirected Import Help Merge Duplicate Edges Copy Vertex Names Calculate Graph Metrics Create Clusters

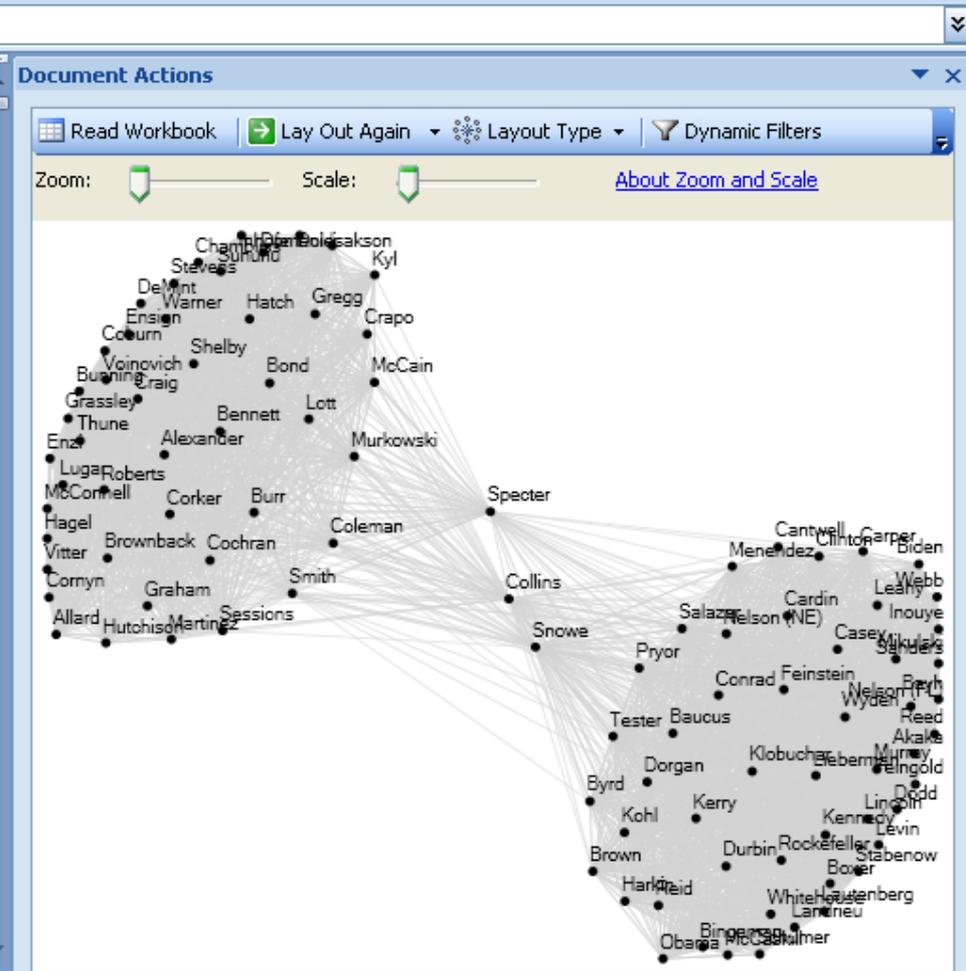
Show/Hide Graph Pane Export Convert Old Workbook Customize Vertex Menus Create Subgraph Images Show Clusters

AutoFill Columns

Graph Edges Vertices Analysis

Security Warning Automatic update of links has been disabled Options...

| H1 | Add Your Own Columns Here | | | | | | |
|----|---------------------------|-----------|------------|-------|---------|------------|----|
| | A | B | C | D | E | F | G |
| 1 | Vertex 1 | Vertex 2 | Color | Width | Opacity | Visibility | ID |
| 2 | Akaka | Alexander | Light Gray | | 1.7 | 0 | 2 |
| 3 | Akaka | Allard | Light Gray | | 1.0 | 0 | 3 |
| 4 | Akaka | Baucus | Light Gray | | 9.9 | 1 | 4 |
| 5 | Akaka | Bayh | Light Gray | | 9.7 | 1 | 5 |
| 6 | Akaka | Bennett | Light Gray | | 2.0 | 0 | 6 |
| 7 | Akaka | Biden | Light Gray | | 10.0 | 1 | 7 |
| 8 | Akaka | Bingaman | Light Gray | | 10.0 | 1 | 8 |
| 9 | Akaka | Bond | Light Gray | | 1.6 | 0 | 9 |
| 10 | Akaka | Boxer | Light Gray | | 10.0 | 1 | 10 |
| 11 | Akaka | Brown | Light Gray | | 10.0 | 1 | 11 |
| 12 | Akaka | Brownback | Light Gray | | 1.0 | 0 | 12 |
| 13 | Akaka | Bunning | Light Gray | | 1.0 | 0 | 13 |
| 14 | Akaka | Burr | Light Gray | | 1.0 | 0 | 14 |
| 15 | Akaka | Byrd | Light Gray | | 10.0 | 1 | 15 |
| 16 | Akaka | Cantwell | Light Gray | | 10.0 | 1 | 16 |
| 17 | Akaka | Cardin | Light Gray | | 10.0 | 1 | 17 |
| 18 | Akaka | Carper | Light Gray | | 10.0 | 1 | 18 |
| 19 | Akaka | Casey | Light Gray | | 10.0 | 1 | 19 |
| 20 | Akaka | Chambliss | Light Gray | | 1.0 | 0 | 20 |
| 21 | Akaka | Clinton | Light Gray | | 10.0 | 1 | 21 |
| 22 | Akaka | Coburn | Light Gray | | 1.0 | 0 | 22 |
| 23 | Akaka | Cochran | Light Gray | | 1.7 | 0 | 23 |



Data import

Data post-processing

Data layout

Metrics computation

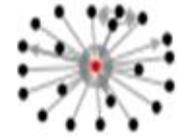
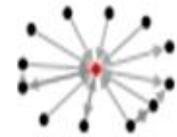
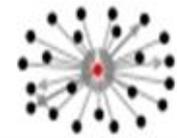
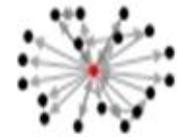
Mapping metrics onto visual properties

Filtering, Motifs, Clustering



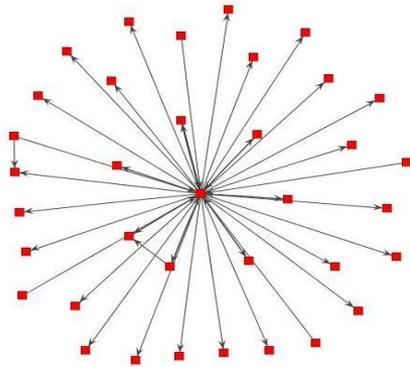
TWITTER NodeXL Graph

“Bing” at 2:30 AM Monday, July 12, 2010

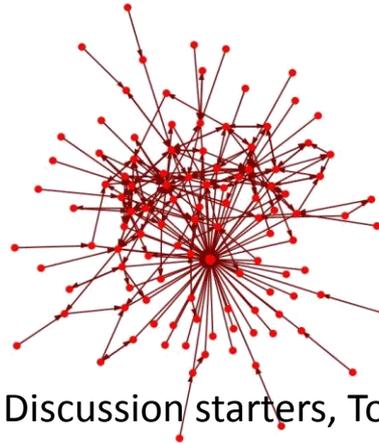


A screenshot of the Microsoft Excel application window. The title bar reads "2010 - June - NodeXL - Collector - bing_2010-07-12_02-30-00 - Microsoft Excel". The interface is divided into several panes. At the top is the Excel ribbon with tabs for Home, Insert, Page Layout, Formulas, Data, Review, View, Developer, and NodeXL. The NodeXL tab is active, showing various toolbars for data import/export, graph refresh, layout selection (Harel-Koren), visual properties (color, opacity, visibility, edge width), and analysis tools (dynamic filters, subgraph images, find clusters). Below the ribbon is a spreadsheet grid with columns A through R and rows 1 through 13. A "Document Actions" pane is open on the right, showing options like "Refresh Graph", "Harel-Koren Fast Mul", "Lay Out Again", "Dynamic Filters", and "Options". The main area of the spreadsheet is filled with a large, complex network graph. The graph consists of numerous nodes, many of which are colored in various colors (red, blue, green, yellow, purple, orange). A central cluster of nodes is highlighted in red and contains a small image of a person's face. The graph is dense and interconnected, with many edges connecting the nodes. At the bottom of the spreadsheet, there is a row of small, colored squares corresponding to the nodes in the graph above. The status bar at the bottom of the window shows "Ready" and "100%".

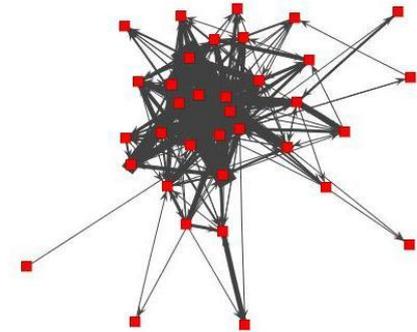
Recognition or Definition of Social Roles?



Experts and “Answer People”



Discussion starters, Topic setters



Discussion people, Topic setters

If an individual systematically participates in a particular manner, he or she can be seen as playing a **role**.

No two individuals are identical. When do they play the same/similar role?

Hypothesis: *we should be able to identify roles by measuring behavioural and structural signatures of the participation.*

Actions ▾ Share this ▾

← Newer 🔍 Older →



Bellagio Fountains in action

The animated fountains synchronized with music in front of the Bellagio Hotel

Comments and faves



Nancy Baym [pro](#) (41 months ago)
Next time invite me to THIS one! :)



eszter [pro](#) (41 months ago)
Nice colors.



By **Marc Smith**
Marc Smith

This photo was taken on [February 3, 2009](#) using a [Panasonic DMC-FZ5](#).

45 views

This photo belongs to

[Marc_Smith's photostream](#) (3,909)



This photo also appears in

▶ [2009 Las Vegas](#) (set)

Tags

[2009](#) • [February](#) • [Las](#) • [Vegas](#) • [Bellagio](#) • [Hotel](#) • [Fountains](#)

Additional info

• Uploaded using [Flickr Uploader 3.0 \(Mac\)](#)

License

🔒 [Some rights reserved](#)

Privacy

🟢 This photo is visible to everyone

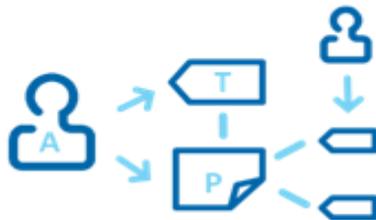
Flickr – Social Engagements



user-photo network
user A comments on photo P



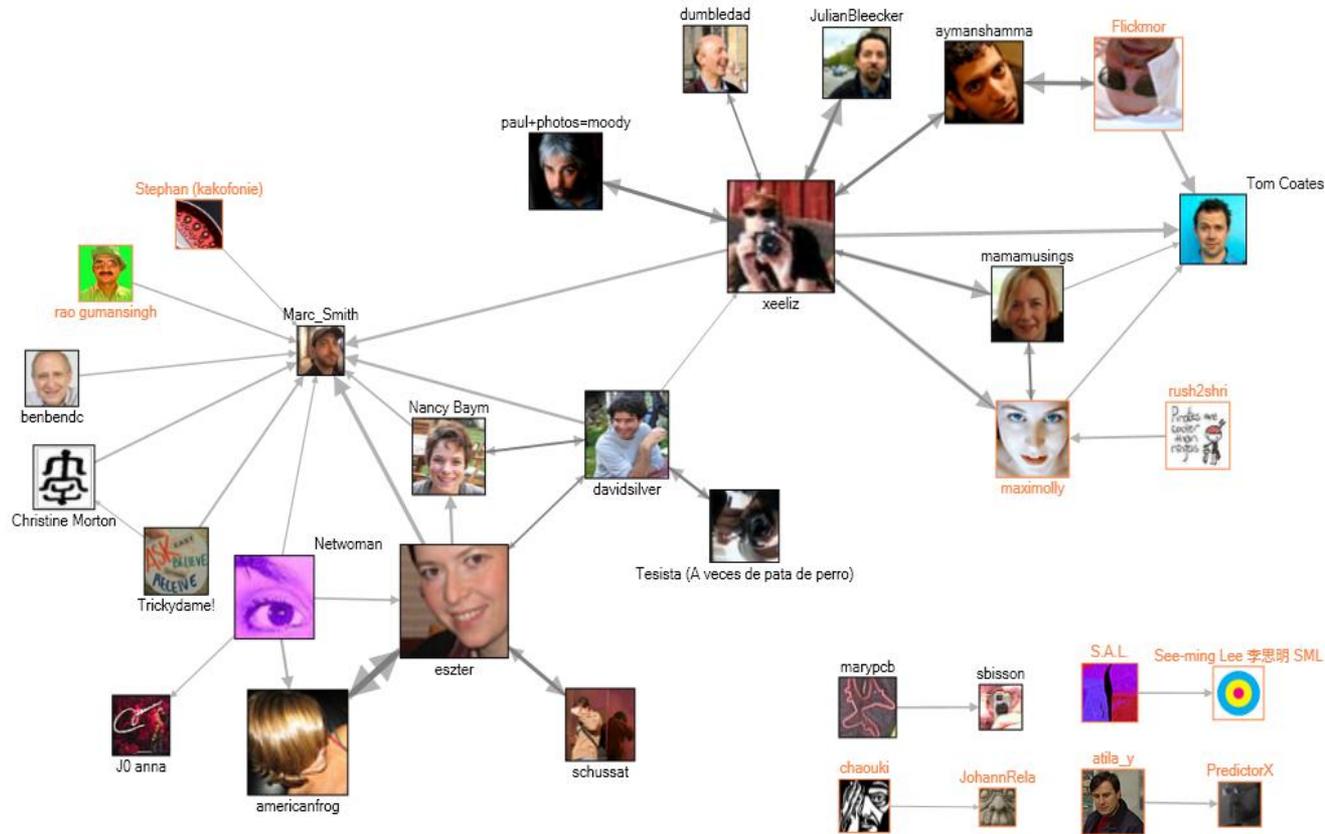
user-user network
user A adds user B as a contact



user-photo-tag network
user A assigns tag T to photo P

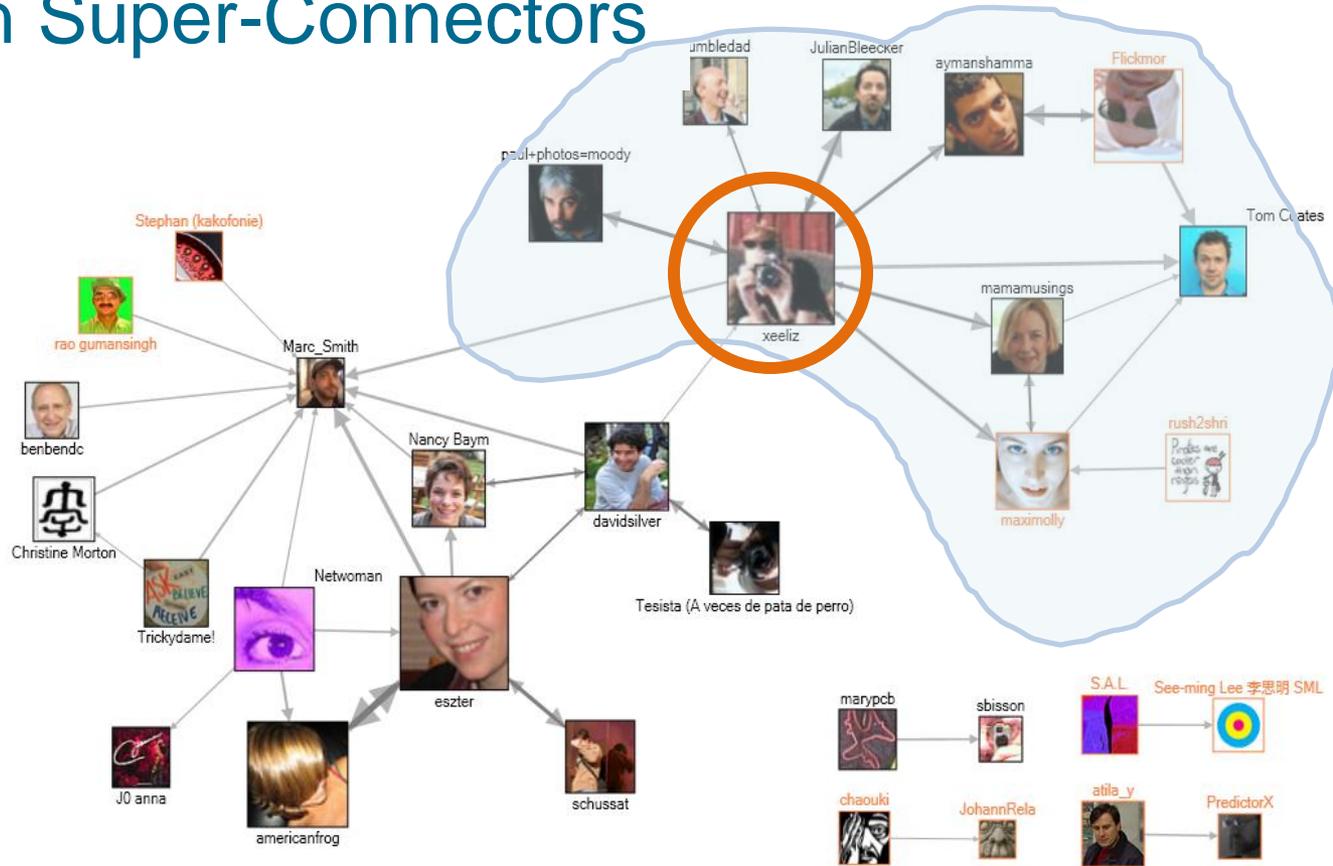


user-group network
user A joins group G



Flickr users who commented on Marc_Smith's photos (more than 4 times)

Human Super-Connectors

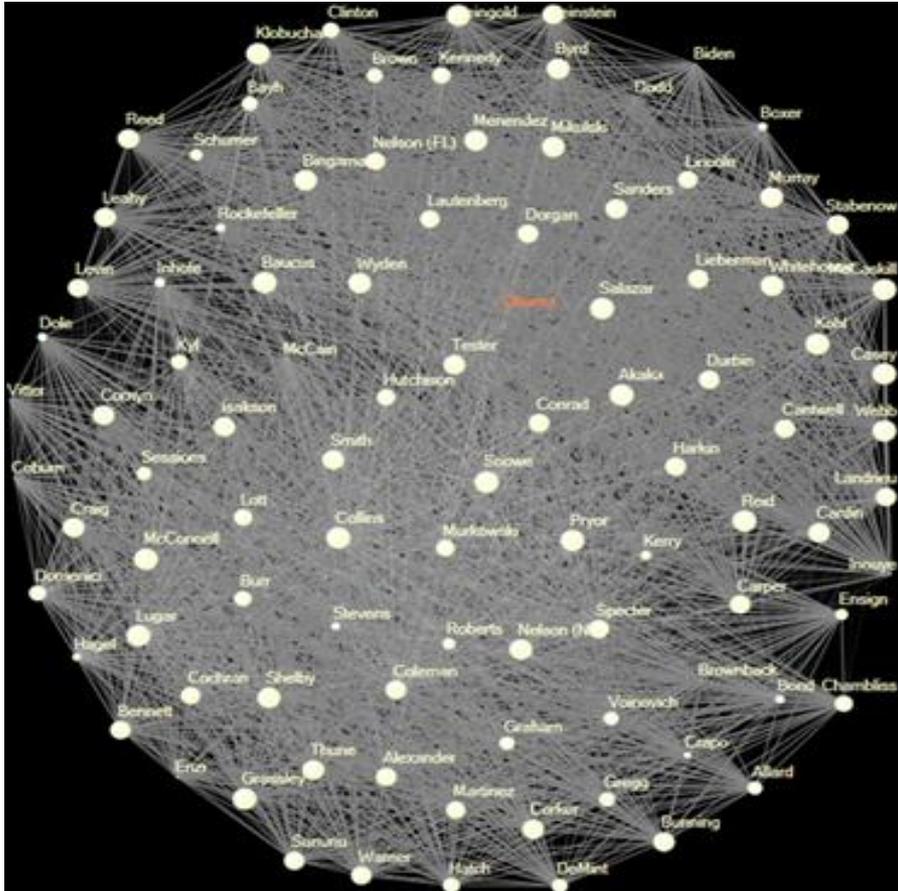


Flickr users who commented on Marc_Smith's photos (more than 4 times)

algorithms and techniques

NETWORK ANALYSIS

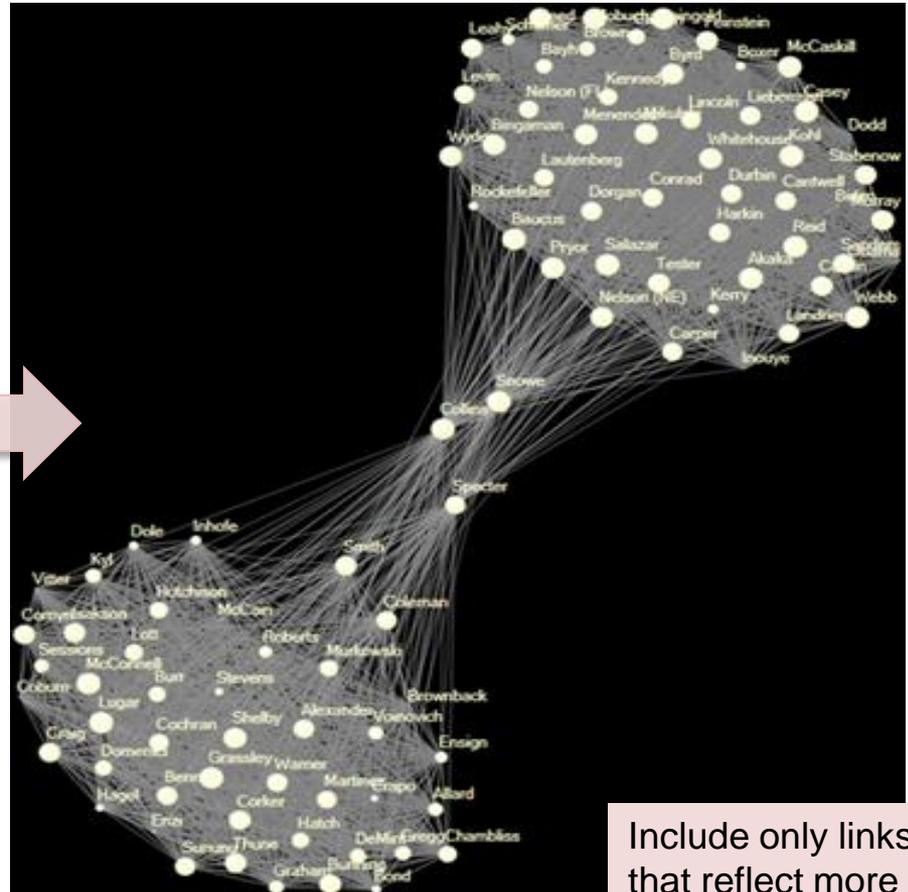
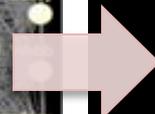
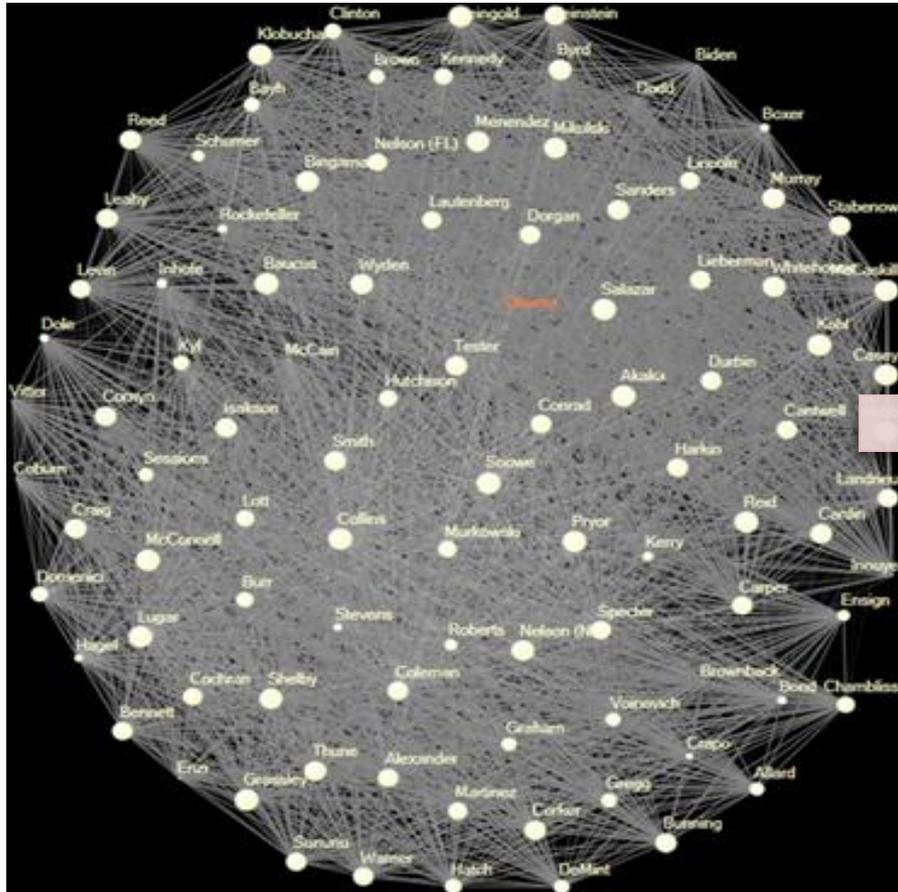
US Senate Voting



NodeXL – Open source project. Extension of Excel for network visualization.

<http://nodexl.codeplex.com/>

US Senate Voting

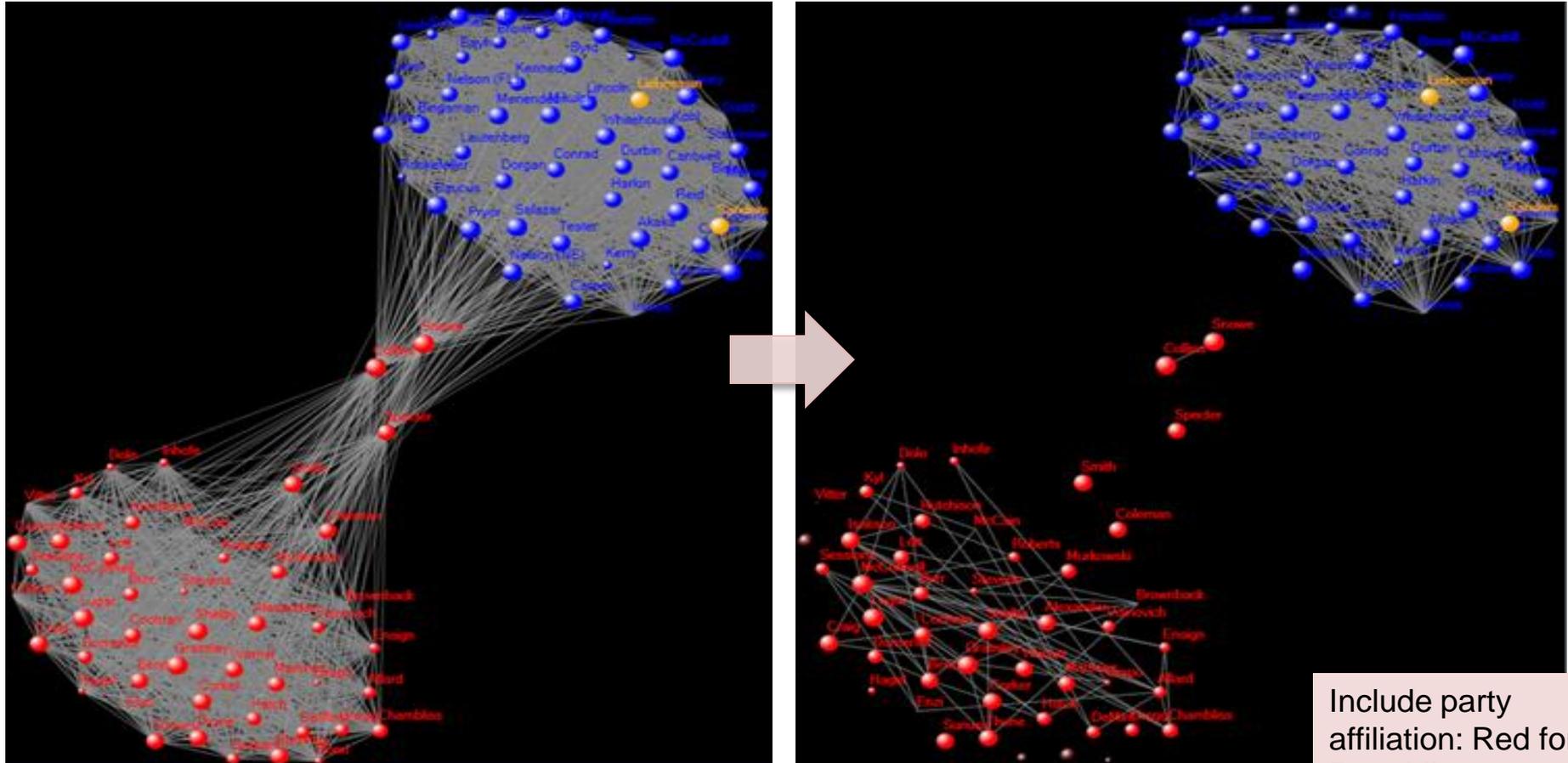


Include only links that reflect more than 65% between two senators.

NodeXL – Open source project. Extension of Excel for network visualization.

<http://nodexl.codeplex.com/>

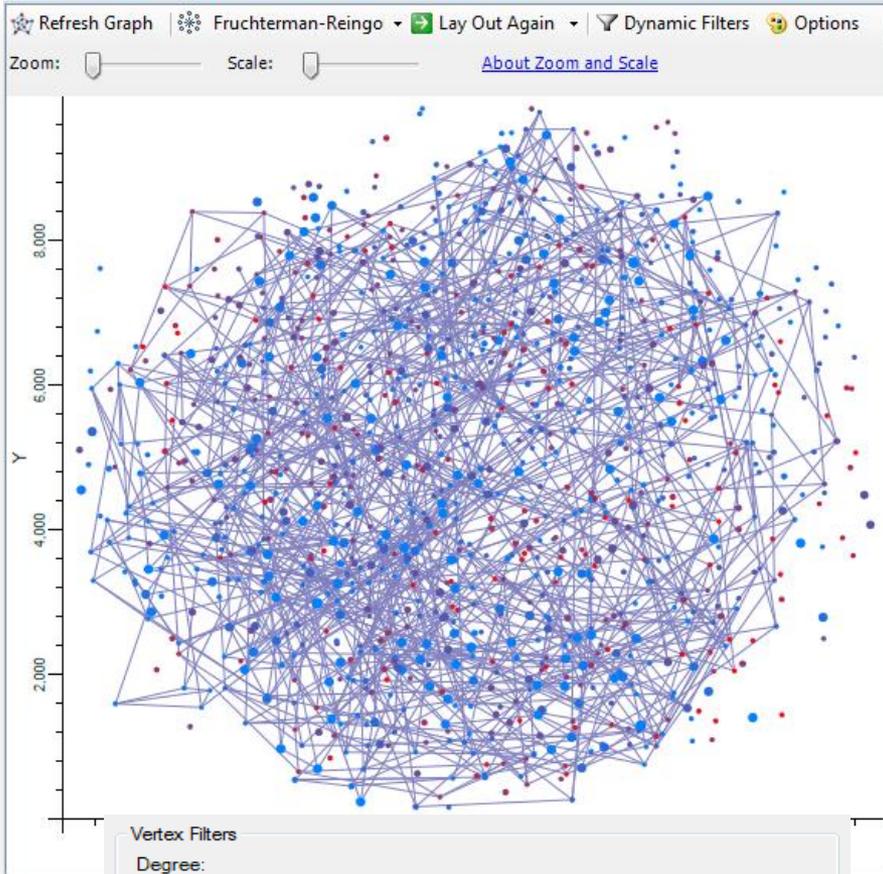
US Senate Voting



NodeXL – Open source project. Extension of Excel for network visualization.

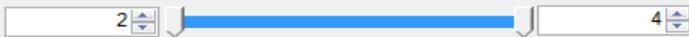
<http://nodexl.codeplex.com/>

Include party affiliation: Red for Republican, Blue Democrats, 2 other parties.

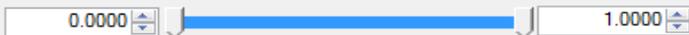


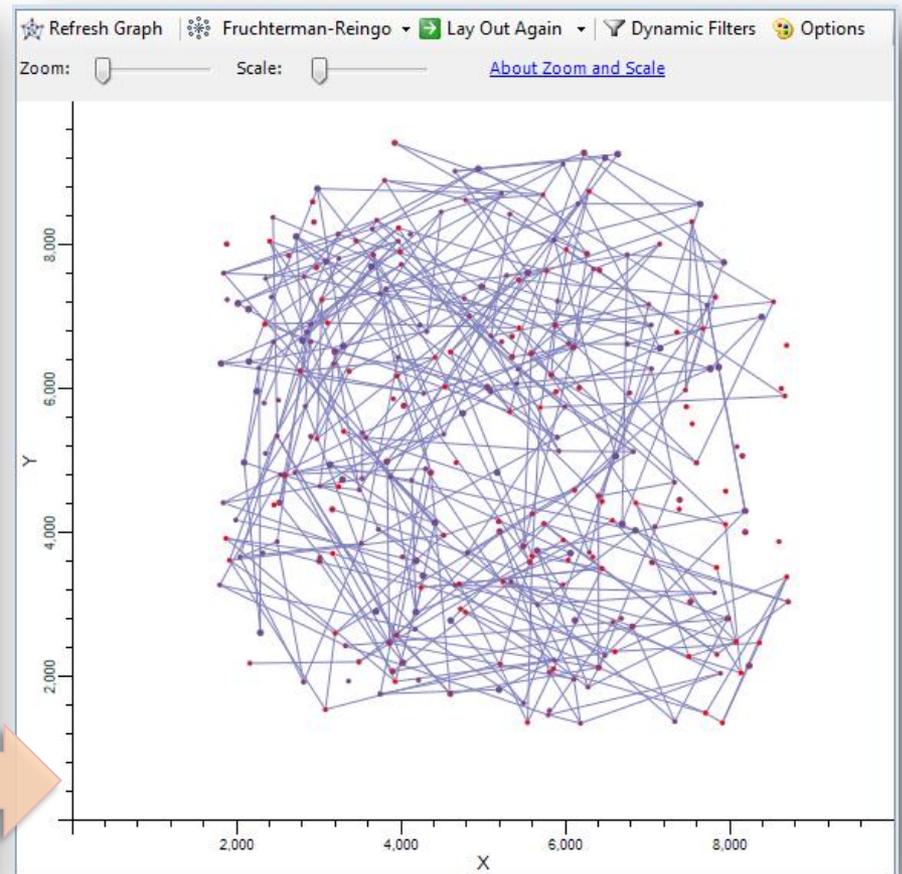
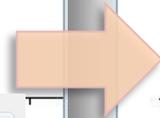
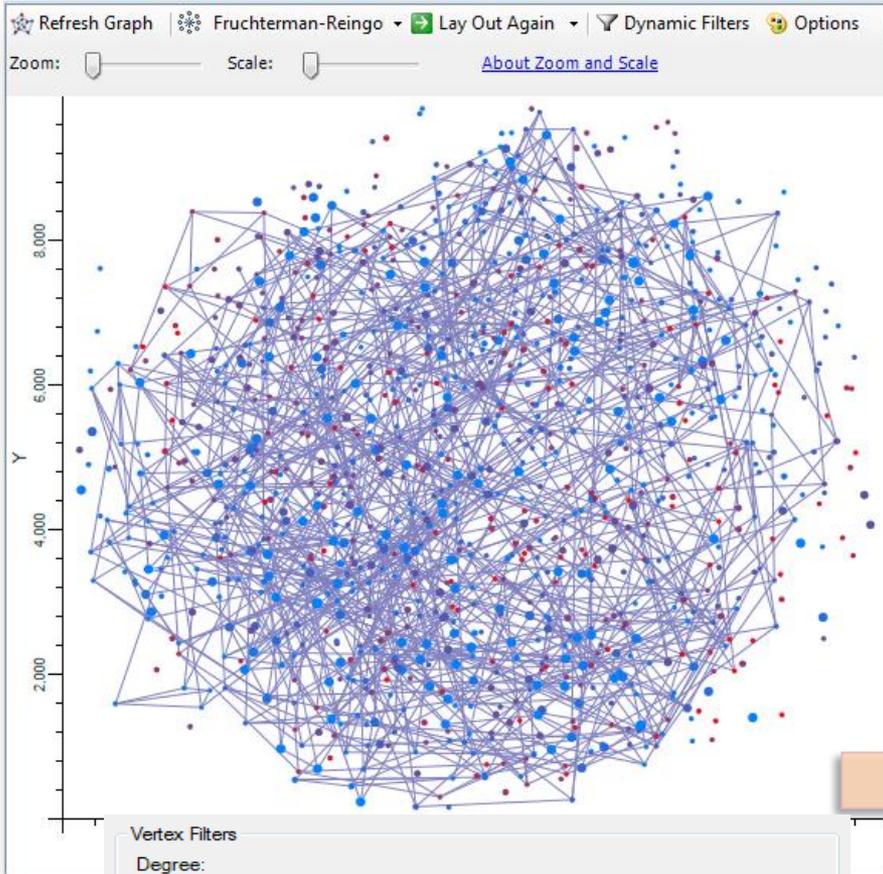
Vertex Filters

Degree:



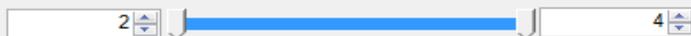
Betweenness
Centrality:



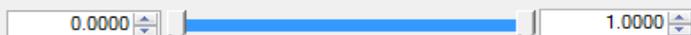


Vertex Filters

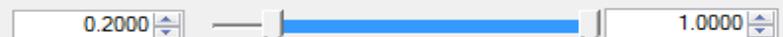
Degree:

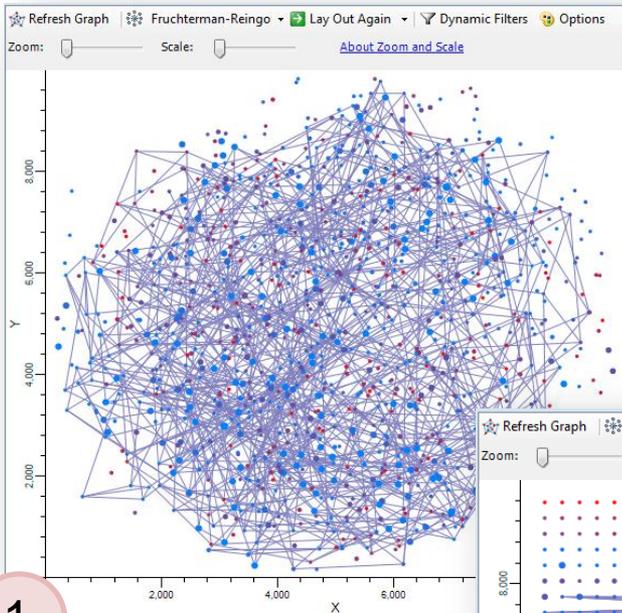


Betweenness
Centrality:



Betweenness
Centrality:

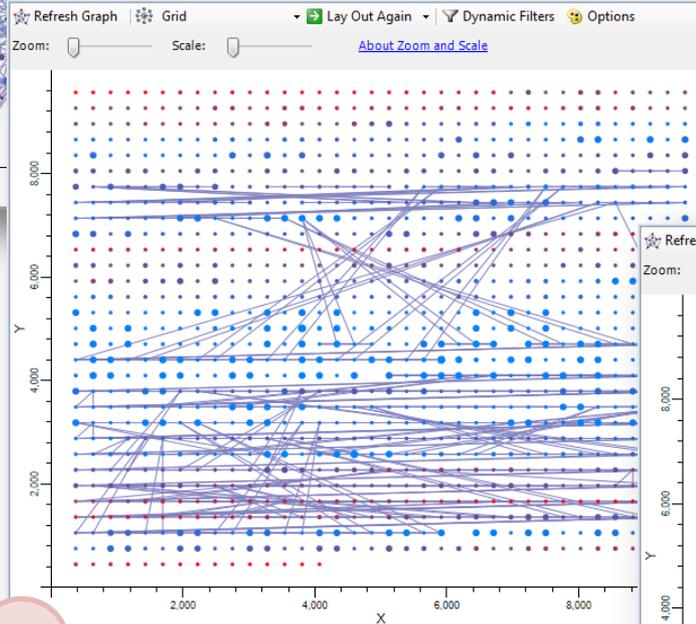




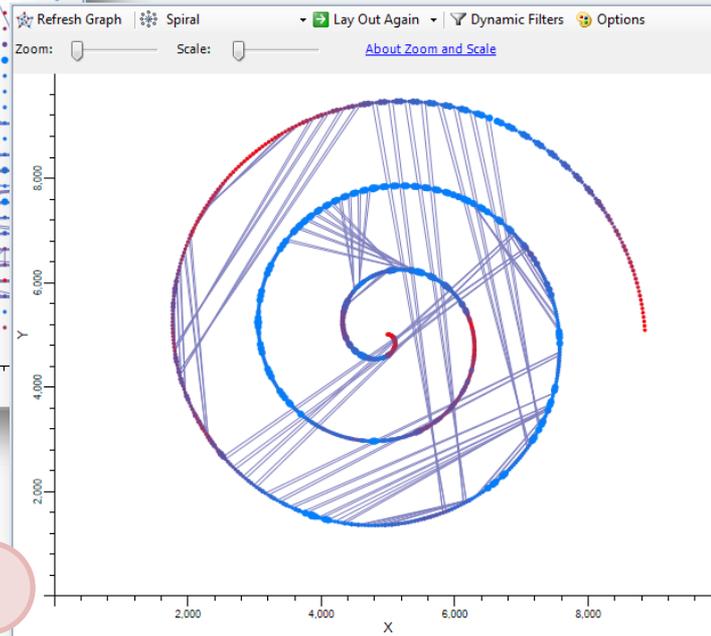
1

The same data set in different layouts:

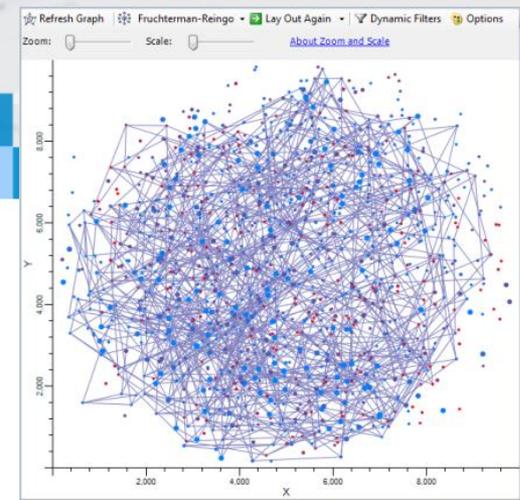
1. Fruchterman-Reingold
2. Grid
3. Spiral.



2



3

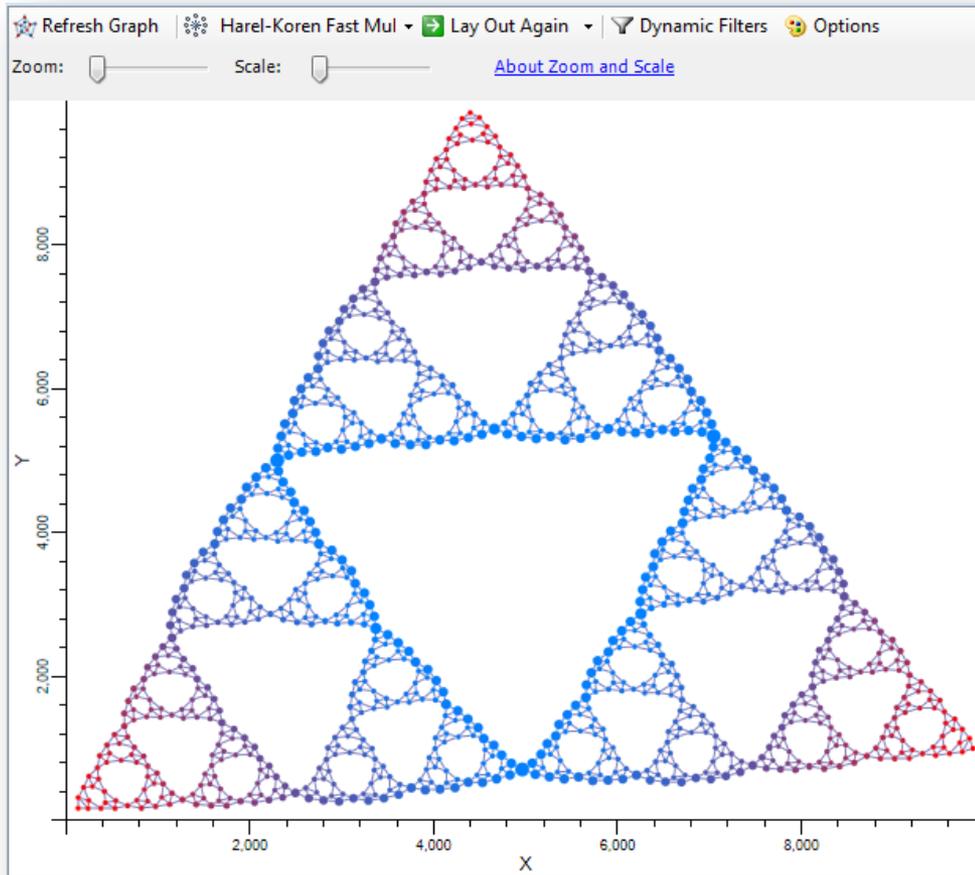


Fundamental issues

Understanding of the tools that are applied

Understanding of the applied analysis

Understanding the relationship between the analysis and the layout algorithm used in visualization.



Visualization using Harel-Koren layout algorithm.

Sierpinski triangle is a fractal named after Waclaw Sierpinski who described it in 1915.

It is an example of self-similar sets, a mathematically generated pattern that is replicated at every level of reduction or magnification.



layout algorithms and readability metrics

VISUALIZATION

NodeXLGraph4 - Microsoft Excel

Table Tools

Home Insert Page Layout Formulas Data Review View Add-Ins Community Clips NodeXL Design

Import Export Prepare Data Refresh Graph Prepare Data

Type: Directed Layout: Fruchterman-R... Schemes Autofill Columns

Color Opacity Vertex Shape Vertex Size Dynamic Filters Find Clusters Graph Metrics Subgraph Images Graph Elements

Workbook Columns Register Check for Updates Home Page About Microsoft

Visual Properties Visual Properties Analysis Show/Hide Help

Vertex

Autofill Columns

How Autofill Columns works

When Autofill is clicked, fill in these worksheet columns... using the values in these source columns, if the columns exist

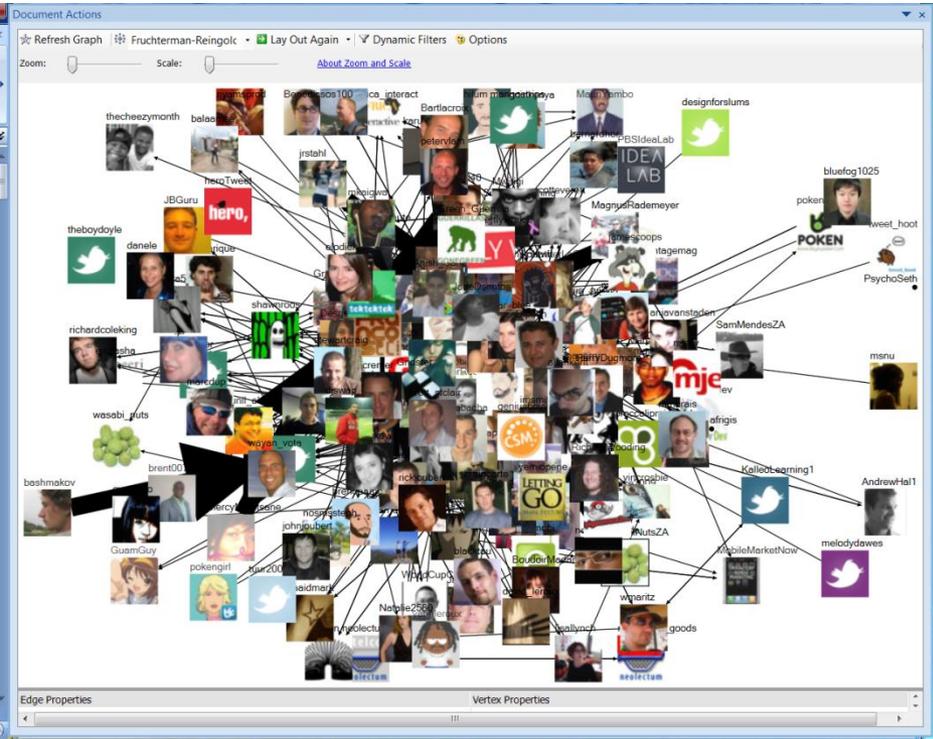
Options

| Property | Source Column | Value |
|---------------------|---------------|-------|
| Edge Color | | |
| Edge Width | Edge Weight | |
| Edge Opacity | | |
| Edge Visibility | | |
| Vertex Color | | |
| Vertex Shape | Followed | |
| Vertex Size | | |
| Vertex Opacity | Followers | |
| Vertex Label | Vertex | |
| Fill Color | | |
| Vertex ToolTip | Tweet | |
| Vertex Visibility | | |
| Vertex Layout Order | | |
| Vertex X | | |
| Vertex Y | | |
| Vertex Polar B | | |
| Vertex Polar Angle | | |

Reset All Autofill Close

| Property | Value |
|------------------------|-------|
| Centrality | 0.611 |
| Closeness Centrality | 1.842 |
| Eigenvector Centrality | 0.162 |
| Clustering Coefficient | 0.150 |
| Centrality | 0.526 |
| Closeness Centrality | 1.746 |
| Eigenvector Centrality | 0.222 |
| Clustering Coefficient | 0.212 |
| Centrality | 0.928 |
| Closeness Centrality | 1.774 |
| Eigenvector Centrality | 0.163 |
| Clustering Coefficient | 0.155 |
| Centrality | 0.250 |
| Closeness Centrality | 1.944 |
| Eigenvector Centrality | 0.169 |
| Clustering Coefficient | 0.232 |
| Centrality | 0.774 |
| Closeness Centrality | 1.881 |
| Eigenvector Centrality | 0.135 |
| Clustering Coefficient | 0.176 |
| Centrality | 0.252 |
| Closeness Centrality | 1.921 |
| Eigenvector Centrality | 0.163 |
| Clustering Coefficient | 0.233 |
| Centrality | 0.467 |
| Closeness Centrality | 1.831 |
| Eigenvector Centrality | 0.181 |
| Clustering Coefficient | 0.186 |
| Centrality | 0.787 |
| Closeness Centrality | 1.966 |
| Eigenvector Centrality | 0.066 |
| Clustering Coefficient | 0.083 |
| Centrality | 0.416 |
| Closeness Centrality | 1.972 |
| Eigenvector Centrality | 0.124 |
| Clustering Coefficient | 0.123 |
| Centrality | 0.320 |
| Closeness Centrality | 1.915 |
| Eigenvector Centrality | 0.169 |
| Clustering Coefficient | 0.205 |
| Centrality | 0.442 |
| Closeness Centrality | 1.949 |
| Eigenvector Centrality | 0.152 |
| Clustering Coefficient | 0.205 |
| Centrality | 0.170 |
| Closeness Centrality | 1.921 |
| Eigenvector Centrality | 0.166 |
| Clustering Coefficient | 0.266 |

Count: 33 90%



NodeXLGraph4 - Microsoft Excel

Table Tools

Home Insert Page Layout Formulas Data Review View Add-Ins Community Clips NodeXL Design

Import Export Prepare Data Data Graph

Refresh Graph Layout Fruchterman-R... Schemes Autofill Columns Visual Properties

Color Vertex Shape Opacity Vertex Size Dynamic Filters Find Clusters Analysis

Graph Metrics Subgraph Images Graph Elements Workbook Columns Graph Elements Home Page About Microsoft

Register Check for Updates About Microsoft

Vertex

| Vertex | Subgraph | Centrality | Closeness Centrality | Eigenvector Centrality | Clustering Coefficient | Color |
|--------|-----------------|------------|----------------------|------------------------|------------------------|-------|
| 1 | | | | | | |
| 2 | Vertex | | | | | |
| 3 | matthewbuckland | 0.611 | 1.842 | 0.162 | 0.150 | |
| 4 | justinspratt | 0.526 | 1.746 | 0.222 | 0.212 | |
| 5 | matthewdawes | 0.928 | 1.774 | 0.163 | 0.155 | |
| 6 | gabryosario | 0.250 | 1.944 | 0.169 | 0.232 | |
| 7 | marc_smith | 0.774 | 1.881 | 0.135 | 0.176 | |
| 8 | shapshak | 0.252 | 1.921 | 0.163 | 0.233 | |
| 9 | nicharry | 0.467 | 1.831 | 0.181 | 0.186 | |
| 10 | whiteafrikan | 0.787 | 1.966 | 0.066 | 0.083 | |
| 11 | TylerReed | 0.416 | 1.972 | 0.124 | 0.123 | |
| 12 | elanlohmann | 0.320 | 1.915 | 0.169 | 0.205 | |
| 13 | andyhadfield | 0.442 | 1.949 | 0.152 | 0.205 | |
| 14 | HeidiPatmore | | | | | |

Autofill Columns

How Autofill Columns works

When Autofill is clicked, fill in these worksheet columns... using the values in these source columns, if the columns exist

Options

Edge Color

Edge Width

Edge Opacity

Edge Visibility

Vertex Color

Vertex Shape

Vertex Size

Vertex Opacity

Vertex Label

Fill Color

Vertex ToolTip

Vertex Visibility

Vertex Layout Order

Vertex X

Vertex Y

Vertex Polar B

Vertex Polar Angle

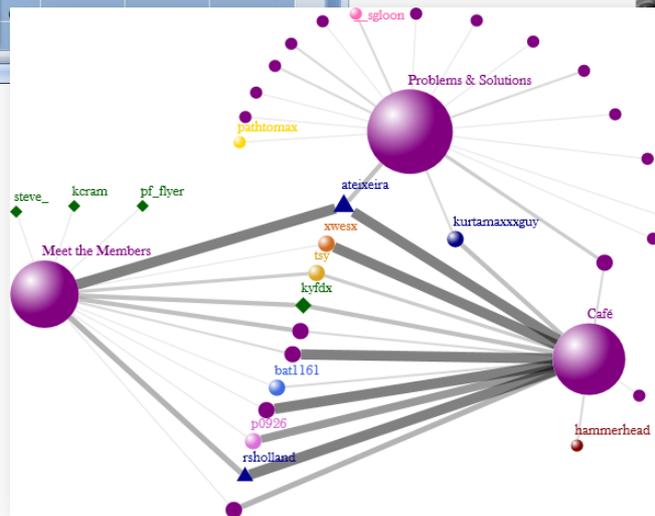
Reset All Autofill Close

Document Actions

Refresh Graph Fruchterman-Reingold Lay Out Again Dynamic Filters Options

Zoom: Scale: About Zoom and Scale

Vertex Properties

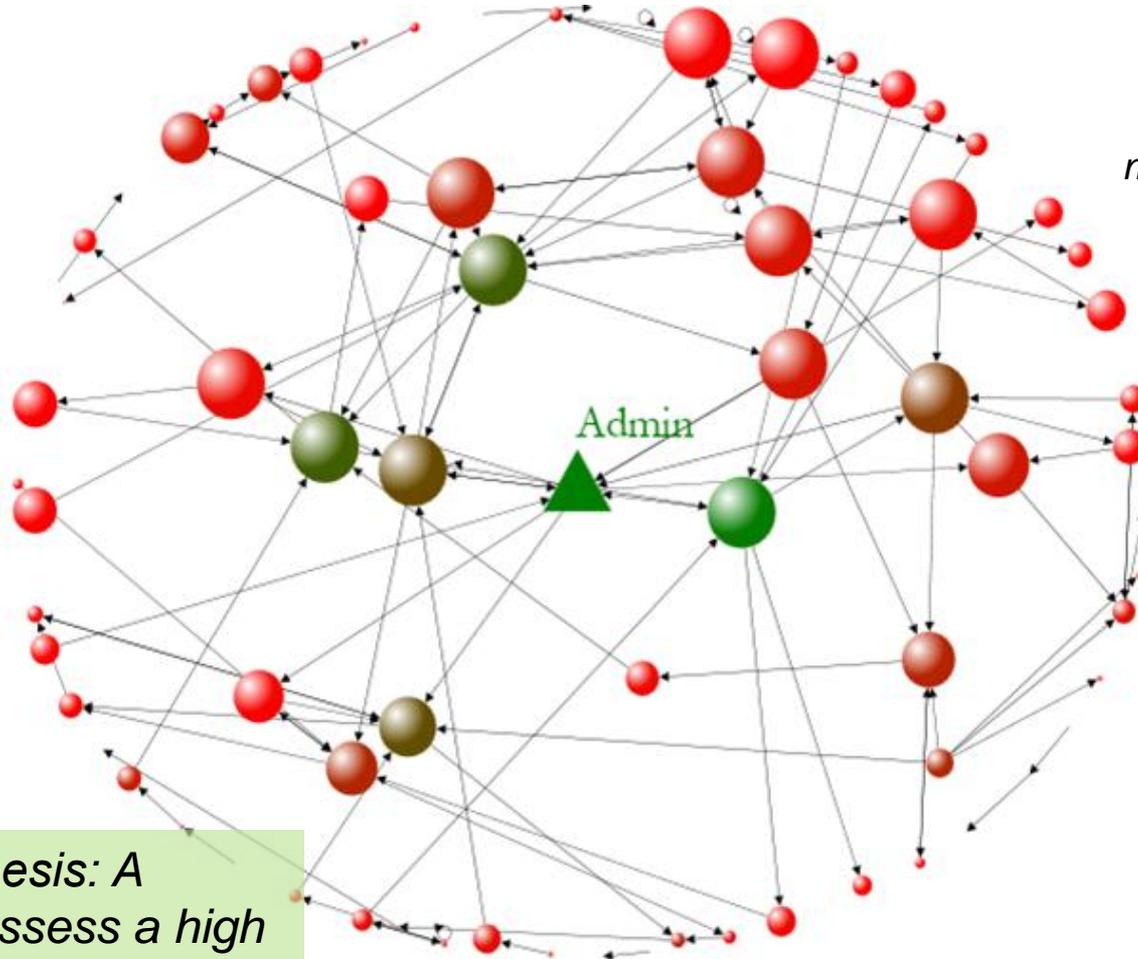


Vertex Color = Betweenness Centrality
Vertex Size = Eigenvector Centrality

Example: Listserv community

Green: Leader
Brown: Regular
Red: Novice

Larger nodes are further along in the membership lifecycle

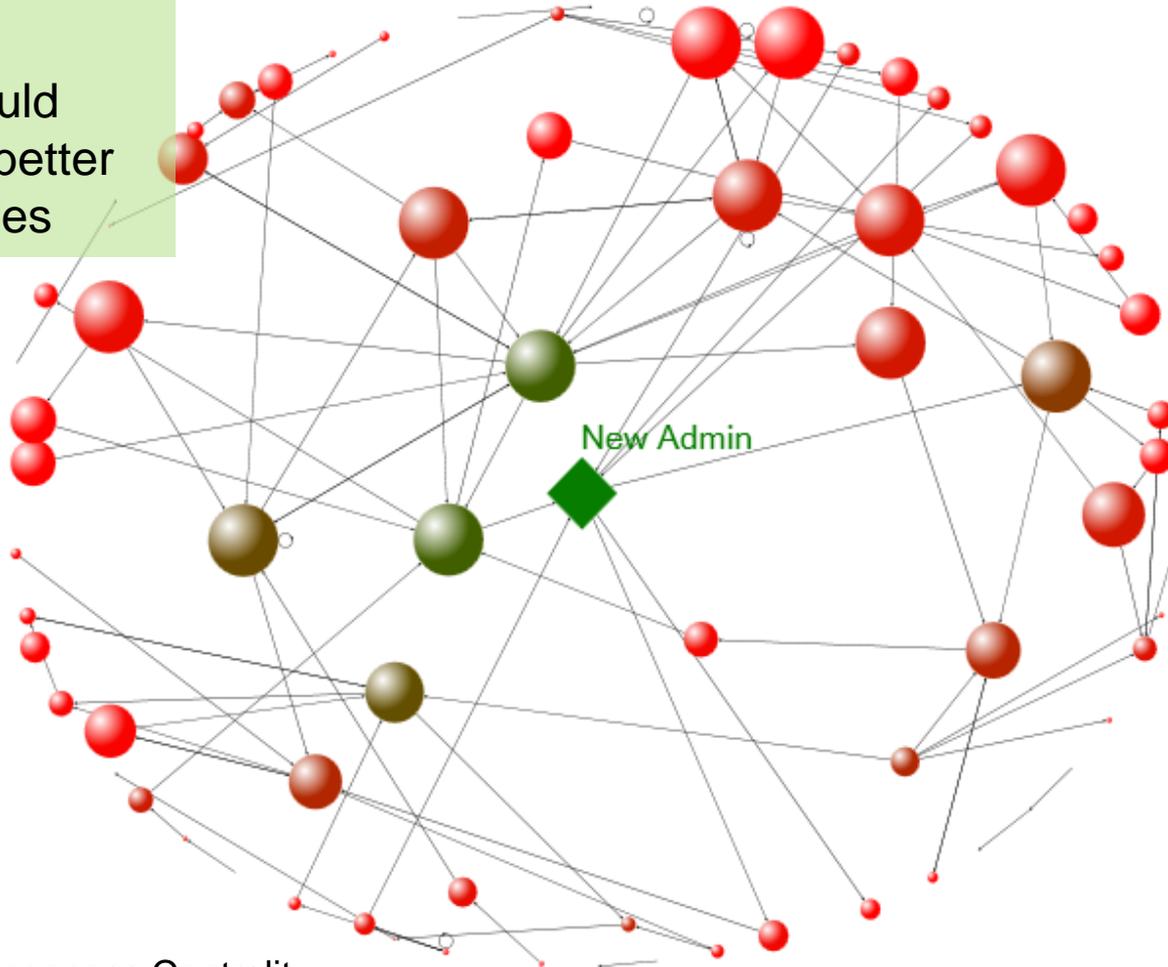


“My initial hypothesis: A leader should possess a high betweenness centrality and a high eigenvector centrality”

Vertex Color = Betweenness Centrality
Vertex Size = Eigenvector Centrality

Alternative 'Admin' Role

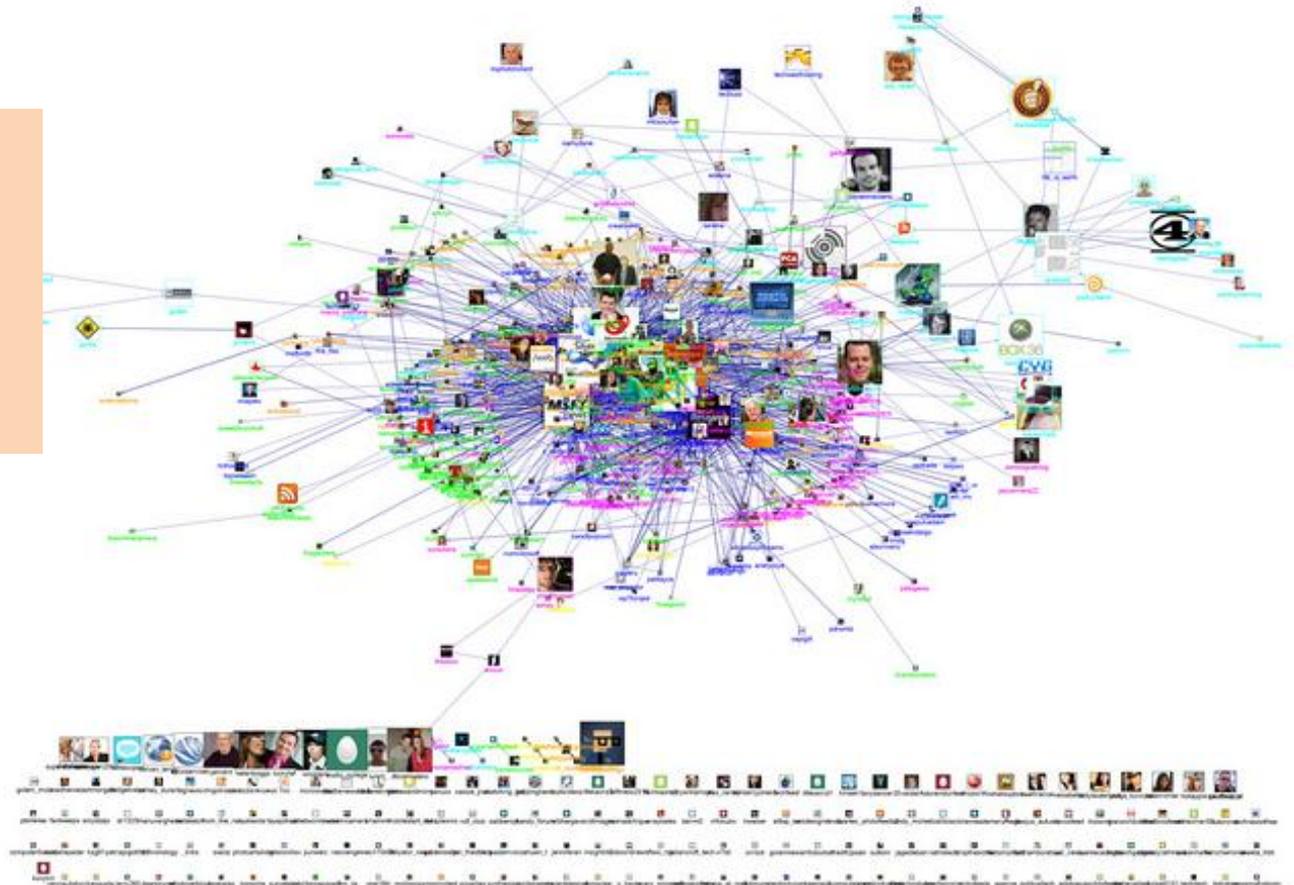
- (1) identify if the correct individuals are currently serving as administrators in the community
- (2) would other individuals would perhaps be a better fit for those roles



Vertex Color = Betweenness Centrality
Vertex Size = Eigenvector Centrality

Visualization of Large Networks

NodeXL supports clustering of nodes. In the graph, distinct groups are assigned different colours.

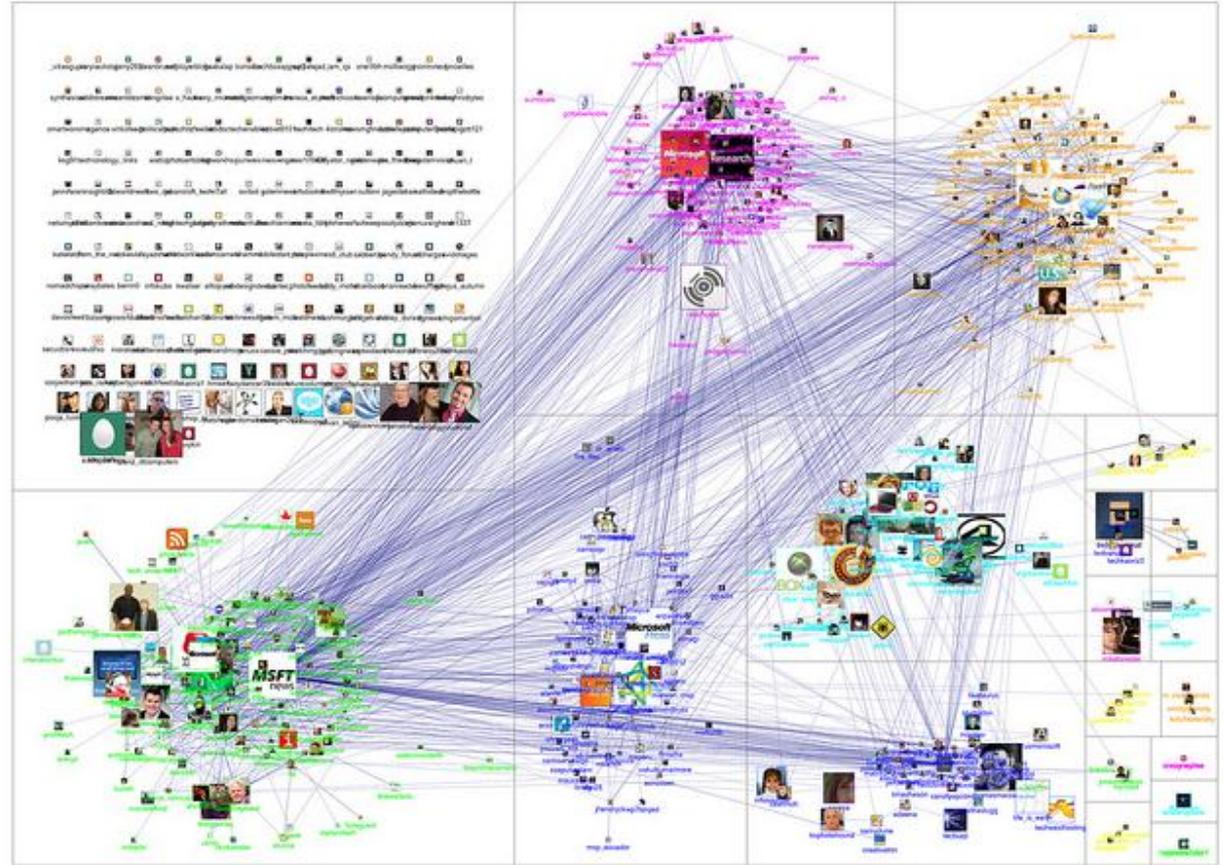


20110313-NodeXL-Twitter-msrtf11 OR techfest graph single region layout

Group-in-a-box layout

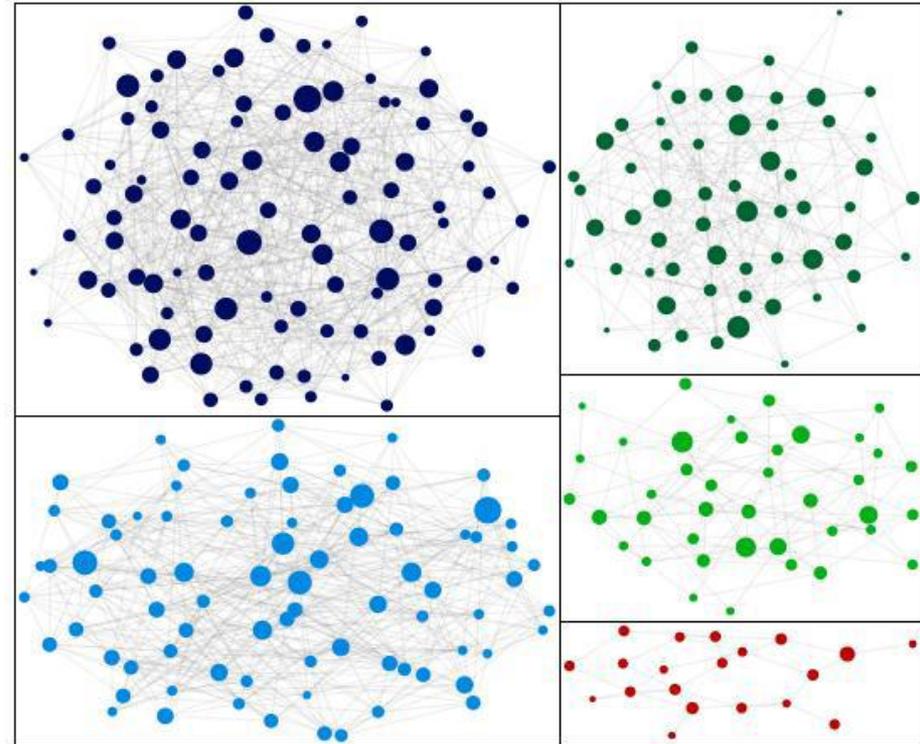
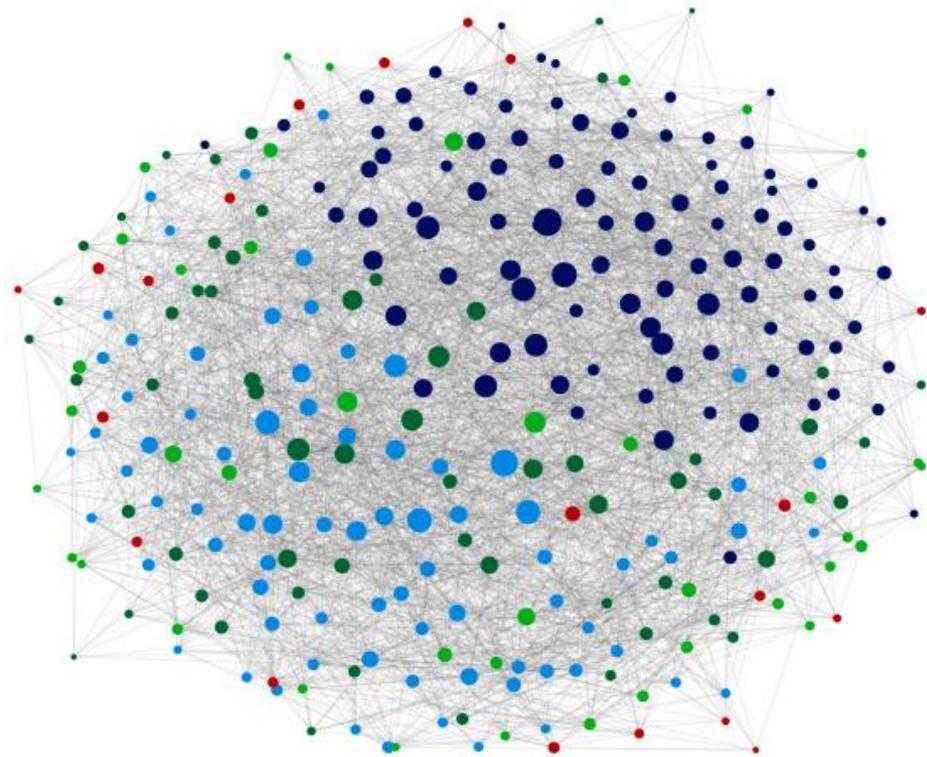
The layout enables visualization of intra-group and inter-group linkage

'Group-in-a-box' layout combines graph clustering with the tree-maps layout (proportional partition of the canvas)



20110313-NodeXL-Twitter-msrtf11 OR techfest group layout

Intra and Inter Cluster Links



shaping the future

REFLECTIONS

Designing Social Platforms and Measuring Social Engagement

- We need to understand and shape human values and devise incentives to encourage desired behaviour.

| | | | |
|--|--|------------|--|
|  | Martyn B. unlocked the Bookworm badge | philly.com |  |
|  | Alex W. unlocked the Smooth Talker badge | TNW |  |
|  | Cloe C. unlocked the Gossiper badge | philly.com |  |

Badgeville

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<http://www.badgeville.com/>

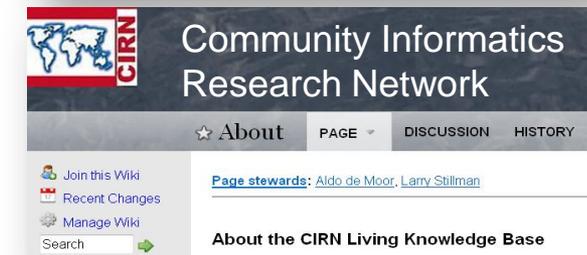
Technology Mediated Social Participation

Technology Mediated Social Participation

U.S. National Science Foundation sponsored workshops



| | About TMSP | Advisory Committee | West Coast Workshop | East Coast Workshop |
|------------------------------|--|--------------------|---------------------|--|
| Conferences and Publications | <p>All around us, technology-mediated social participation has been harnessed for remarkable social benefits. New thrusts in basic research and engineering are likely to move beyond existing socio-technical media to produce new participatory systems spanning people, computation, communication and action. These developments could produce profound transformations in health care, community safety, disaster response, life-long learning, business innovation, energy sustainability, environmental protection, and other spheres of important national priorities.</p> | | | <p>Workshop Information</p> <p>The west-coast workshop will be held on December 10-11 2009, at the Palo Alto Research Center (PARC), Palo Alto, California.</p> |
| Books | | | | |
| Courses | | | | |
| Research Groups | | | | |
| International Efforts | | | | |
| Bibliographic resources | | | | |
| TMSP Google Group | | | | |



www.tmsp.umd.edu



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- avunlu** Based on Obama logic on #Sotillo, BP should be entitled to investigate itself "impartially" of course!
1 day ago from Twitter for iPhone Reply View Tweet
200+ recent retweets
- maddow** No one avail to co-chair the Oil Spill Commission who "snrt" on the board of oil companies? Really? No one? <http://is.gd/vy5u> (search)
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- ingoodtrust** RT @dinkychefateer: Jobs created by Obama: Gov of New Jersey, Gov of Virginia, Senator from MA <http://t.co/4f6c> (search)
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- Carvantes** RT @conservative: RT @conservative: RT @mabred: The Sestak Broe - An Impeachable Offense For Barack Obama? <http://bit.ly/2z9SG> (cont)...
less than 20 seconds ago from HootSuite Reply View Tweet
- Carmin99** RT @astemagazine: The danger is growing daily for the families in AZ, and Obama or no one else in this Administration cares.
less than 20 seconds ago from web Reply View Tweet
- parisMOV** Ftillite-Relancer le processus de paix après la tragédie/Obama <http://bit.ly/2z9SG> (search)
less than 20 seconds ago from twitterfeed Reply View Tweet
- bessaz** Dernières minutes Ftillite-Relancer le processus de paix après la tragédie/Obama. Le "tragique" épisode de fait. <http://bit.ly/2z9SG> (search)
less than 20 seconds ago from twitterfeed Reply View Tweet
- YamunK** RT @carlosarav: Obama declara oficialmente junio "Mes del Orgullo LGTB" <http://bit.ly/2z9SG> (search)
less than 20 seconds ago from TweetDeck Reply View Tweet
- daily_stock** Since May 27 Gas spot prices Henry Hub increased from \$4.22 to \$4.32 with August delivery at \$4.48 (this before Obama's gas comments) half a minute ago from web Reply View Tweet
- ki** Ftillite-Relancer le processus de paix après la tragédie/Obama <http://bit.ly/2z9SG> (search)
half a minute ago from twitterfeed Reply View Tweet
- robinnr** I wonder what I would do if I were president of the US. Obama seems so out of his league - I hope I would do a better job.
half a minute ago from web Reply View Tweet
- isawerlovato** Just watch the Jonases play for Paul McCartney and Barack Obama. Aww...p I remember seeing Paul in concert!! I cried too :)
half a minute ago from web Reply View Tweet
- NightCuldMusic** @keithobermann FOX NEWS busts Obama administration on job numbers. triple counting census <http://www.foxnews.com/yourworld/index.htm>
half a minute ago from web Reply View Tweet

Page 1 of Older

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Social Participation - Early Steps

College Park, MD, April 2009

Article: Science March 2009



Ben Shneiderman

COMMENTARY

Dark lenses

1431

Wood energy

1432

LETTERS | BOOKS | POLICY FORUM | EDUCATION FORUM | PERSPECTIVES

BEN SHNEIDERMAN

LETTERS

edited by Jennifer Sils

A National Initiative for Social Participation

THE TRANSFORMATIVE POWER OF THE INTERNET IS MORE THAN ACCESS TO INFORMATION; it is increasingly about contributing, collaborating, and participating. Metaphors based on information highways are giving way to community visions that capture the remarkable enthusiasm for user-generated content and social media. At the same time, President Obama is calling for civic service and personal responsibility to rebuild America. Combining these ideas could promote the shift from playful, discretionary Internet usage to larger, more serious projects aligned with national priorities such as health care, community safety, education, and innovation.

The good news is that there are many promising social action networks, but these nascent explorations could be greatly accelerated by an organized research program. This program would systematically study the emerging phenomena, determine the sources of success or failure, and disseminate best practices. The payoffs are large enough to warrant an intense national effort akin to NASA's space program or the National Institutes of Health.

Health discussion groups have long been one of the Internet's success stories. Now, clever entrepreneurs are exploring new social participation ideas with projects such as the www.PatientsLikeMe.com Web site, where users offer their medical experiences in the hope of learning about treatment outcomes from one another. At the same time, these users are building a remarkable resource for medical research and discovery. Physicians have already discussed 30,000 cases at www.sermo.com, where they can offer insights about innovative treatments as well as detect unusual disease patterns. Large corporations also recognize the opportunities and are inviting users to store their medical histories in the Microsoft Health Vault or at Google Health.



menting on each other's work, arguing over quality criteria, and discussing what needs to be added. E. O. Wilson's dream of the Encyclopedia of Life, with a Web page for each of Earth's 1.8 million species, is on its way to becoming a citizen science success story that raises environmental awareness. Even YouTube, whose success was spiked by playful videos, is becoming the go-to educational resource and the place for students to post their term projects. These and many other initiatives are based on the collect-relate-create-donate mantra that suggests education happens when students start by collecting information, then move on to working in teams to create ambitious projects for the benefit of someone outside their classroom.

Innovation itself is getting turbocharged by going social. Open-source software projects are now taken seriously by big companies who claim greater reliability for programs that have been tested and read by millions of eyes. Open innovation is gaining similar credibility as corporate research directors who post their problems on www.Innocentive.com get hundreds of serious solutions from diverse creative types. Bloggers are influencing every profession as

National Initiative for Social Participation

Goal: to promote dramatically increased research support and educational opportunities for technology-mediated social participation especially as related to national priorities.

Draft: May 29, 2009



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ANOTHER VIEW— Guest commentary

An open letter to Obama, in support of social participation

By Special to GCN Aug 03, 2009

On the 70th anniversary of Albert Einstein's letter to President Franklin Roosevelt encouraging attention to atomic technology and science, Ben Shneiderman, a computer science professor at the University of Maryland, and several colleagues decided to offer a new version. The following is an open letter to President Barack Obama encouraging exploration of technology-mediated social participation.

August 2nd, 2009

Barack Obama
President of the United States
White House
Washington, D.C.
Sir:

... it has been made probable through the work of innovators in North America, Europe and Asia to set up technology-mediated social participation systems, by which vast amounts of human resources and large quantities of social benefit would be generated.

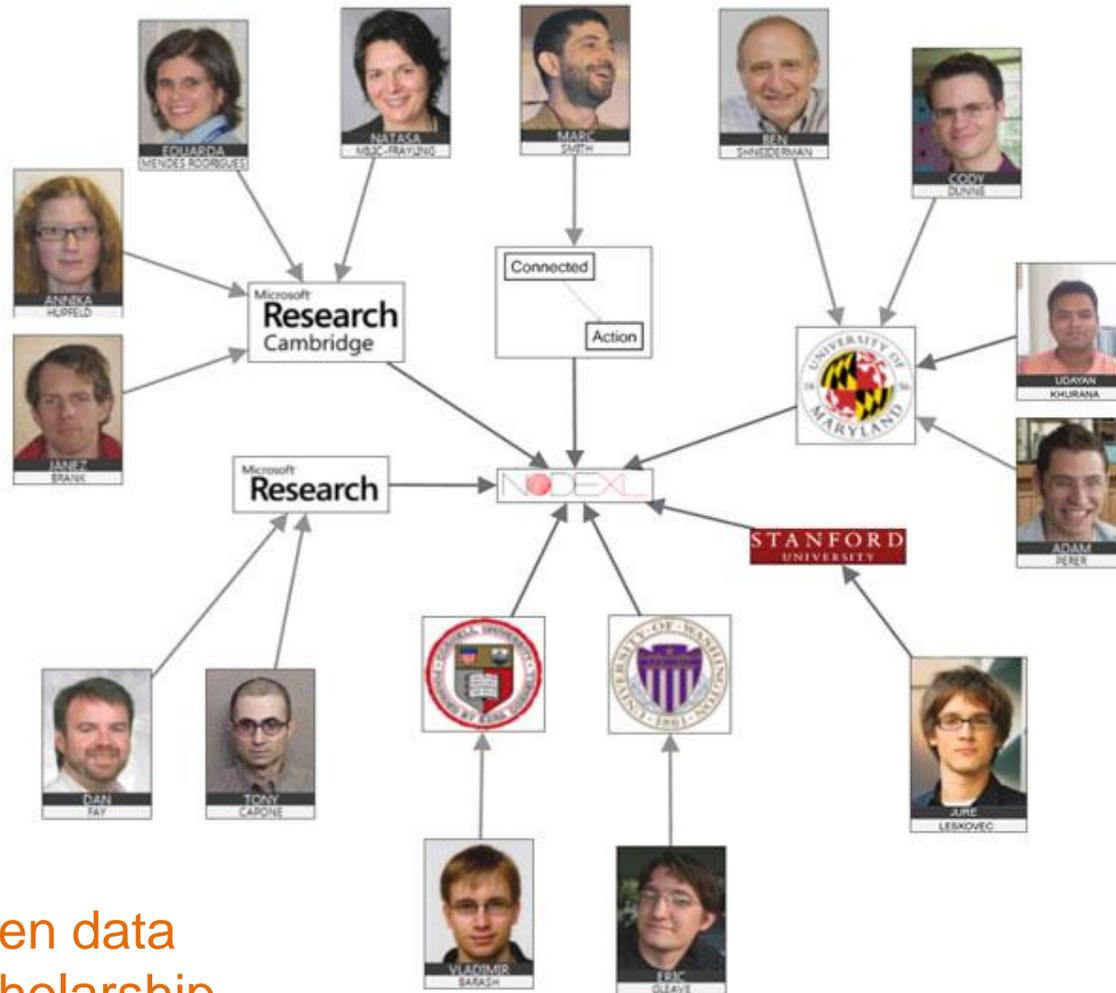
Some recent work by entrepreneurs and important force in the immediate part of the administration. We believe, therefore, that it is our duty to bring to your attention the following facts and recommendations. into a new tion on the

In the course of the last few years, **it has been made probable through the work of innovators in North America, Europe and Asia to set up technology-mediated social participation systems, by which vast amounts of human resources and large quantities of social benefit would be generated.** Technology-mediated social participation is generated when social networking tools (such as Facebook), blogs and microblogs (Twitter), user-generated content sites (YouTube), discussion groups, problem reporting, recommendation systems, and other social media are applied to national priorities such as health, energy, education, disaster response, environmental protection or community safety.

As examples, AmberAlert has more than 7 million users who help with information on child abduction, earthquake, fire, or storm reporting sites, providing information to emergency services, and the site serve.gov enables citizens to offer their service to national parks, museums and other institutions.

Social Media Research Foundation: smrfoundation.org

SMRF supports projects on tools, collections, analysis & visualization of social media data.



Create **open tools**
 Generate & host **open data**
 Support **open scholarship**.

Analyzing Social Media Networks with NodeXL

I. Getting Started with Analyzing Social Media Networks

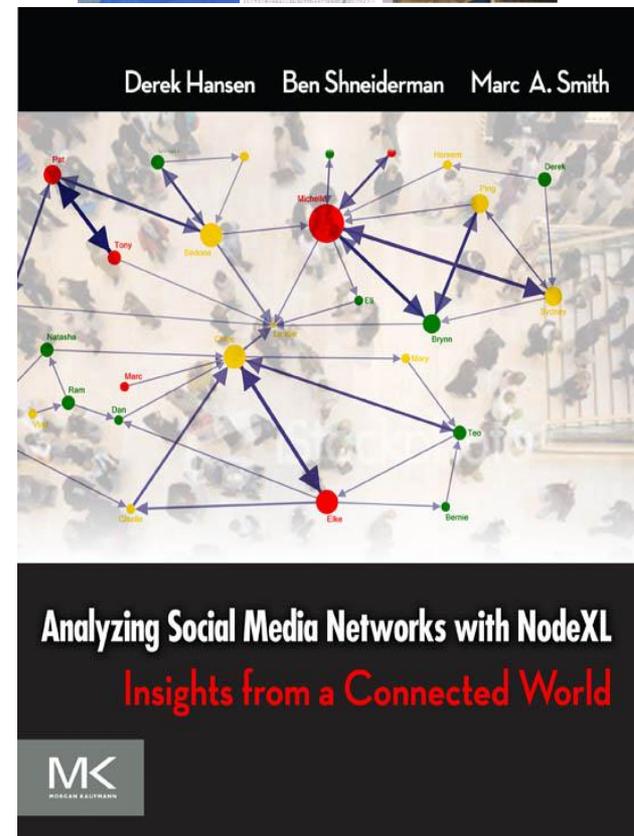
1. Introduction to Social Media and Social Networks
2. Social media: New Technologies of Collaboration
3. Social Network Analysis

II. NodeXL Tutorial: Learning by Doing

4. Layout, Visual Design & Labeling
5. Calculating & Visualizing Network Metrics
6. Preparing Data & Filtering
7. Clustering & Grouping

III Social Media Network Analysis Case Studies

8. Email
9. Threaded Networks
10. Twitter
11. Facebook
12. WWW
13. Flickr
14. YouTube
15. Wiki Networks



Thank you!

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Natasa Milic-Frayling

Integrated Systems

Microsoft Research Ltd.

Cambridge, U.K.

natasamf@microsoft.com

<http://research.microsoft.com/is>