NodeXL Pro Tutorial

1. Social Network and Content Analysis – step-by-step
2. How to automate NodeXL Pro
3. How to find insights
4. Q-and-A

socialmedia RESEARCH FOUNDATION

NODEXL

Dipl.-Geographer Harald Meier
harald@smrfoundation.org

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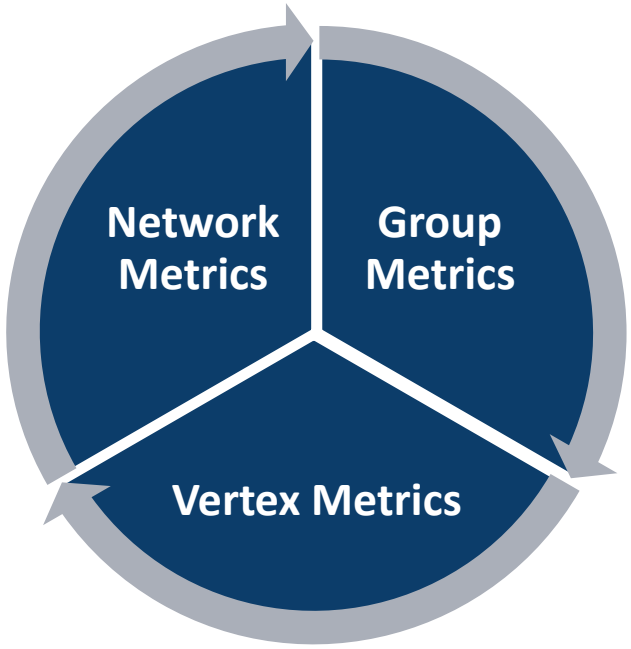
KEY FEATURES OF NODEXL PRO

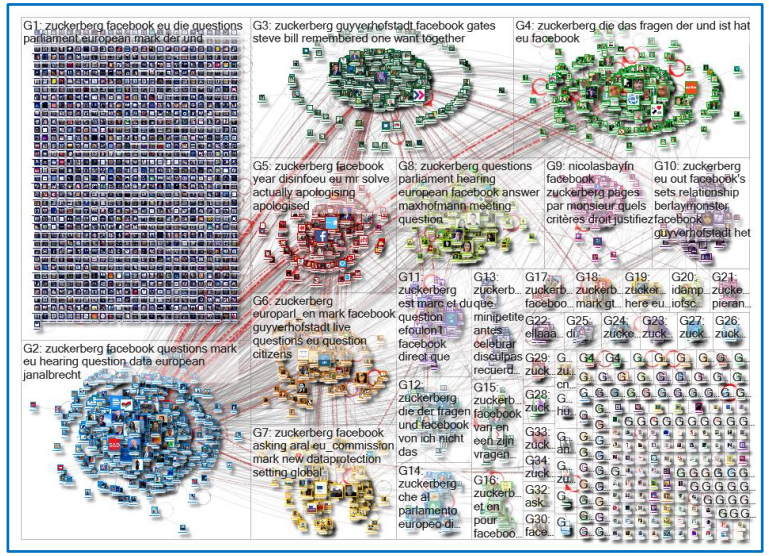
2. Network Analysis



3. Content Analysis

- Text Analysis
- Sentiment Analysis
- Top Contents Analysis
- Time Series Analysis

4. Visualization



1. Data Import

YouTube

6. Automation with Data Recipes

5. Publish

NODEXL GRAPH GALLERY

KEY FEATURES OF NODEXL PRO

Data Import

Data formats
Excel/UCINET/GraphML/
Pajek/GEFX/GDF

Social media data

Flickr

Network Analysis

Network Overview
Network size and composition
Graph density, modularity

Group Analysis
Group by cluster
e.g. Clauset-Newman-Moore
Group metrics

Vertex metrics
Degree/In-/OutDegree
Betweenness/Closeness/
Eigenvector/ PageRank

Path Analysis

Content Analysis

Text Analysis
Words and word pairs from
Tweets, Posts, Replies, …

Sentiment Analysis
Positive/Negative Sentiment
Your list of Keywords

Top Content Summary
By entire network / by group
Top hashtags, URLs, domains
Top words and word pairs

Time Series Analysis
By minute/hour/day/…
By hashtag/word/language/…

Visualization

Customize
Shape, size, color, label of
vertices, edges and groups

Autofill Columns

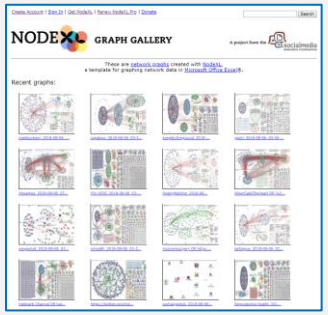
Graph Layout
Various layout algorithms
e.g. Harel-Koren Fast
Multiscale

Group-In-a-Box Layout
Treemap
Force-directed
Packed rectangles

Data Export

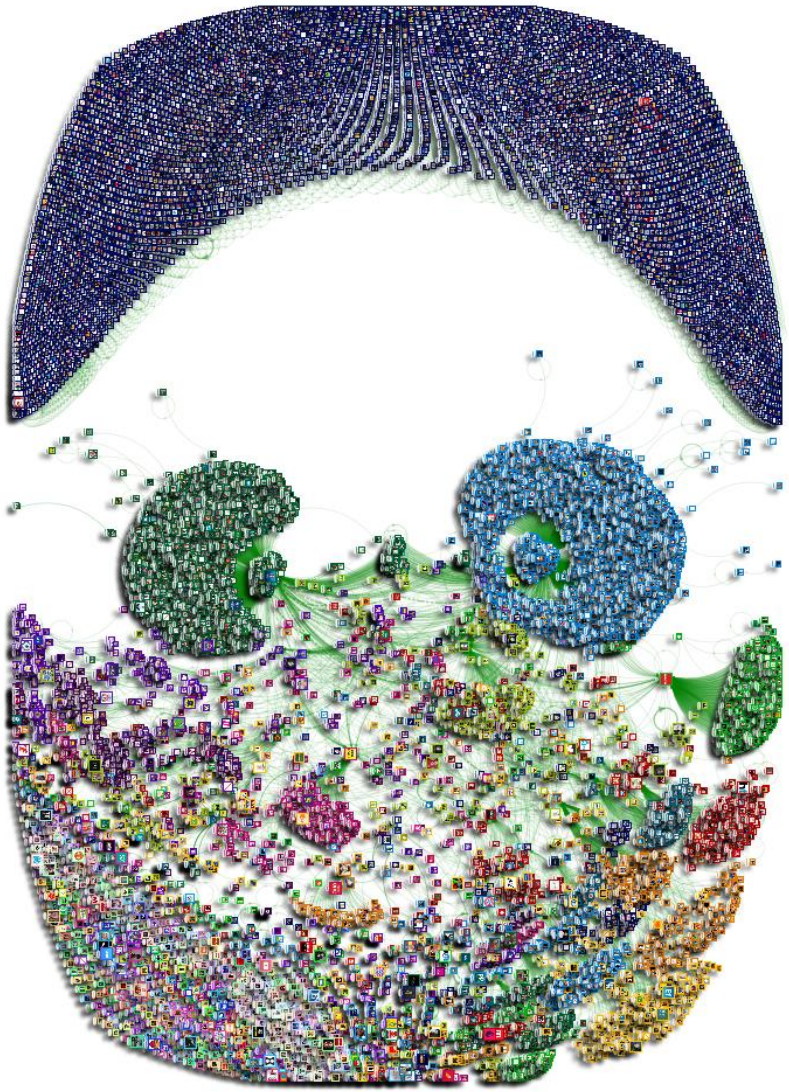
Data formats
Excel/UCINET/GraphML/
Pajek/GEFX/GDF

Publish to the web
NodeXL Graph Gallery



Export to Powerpoint
Export to Polinode

Automate Key Features with NodeXL Data Recipes

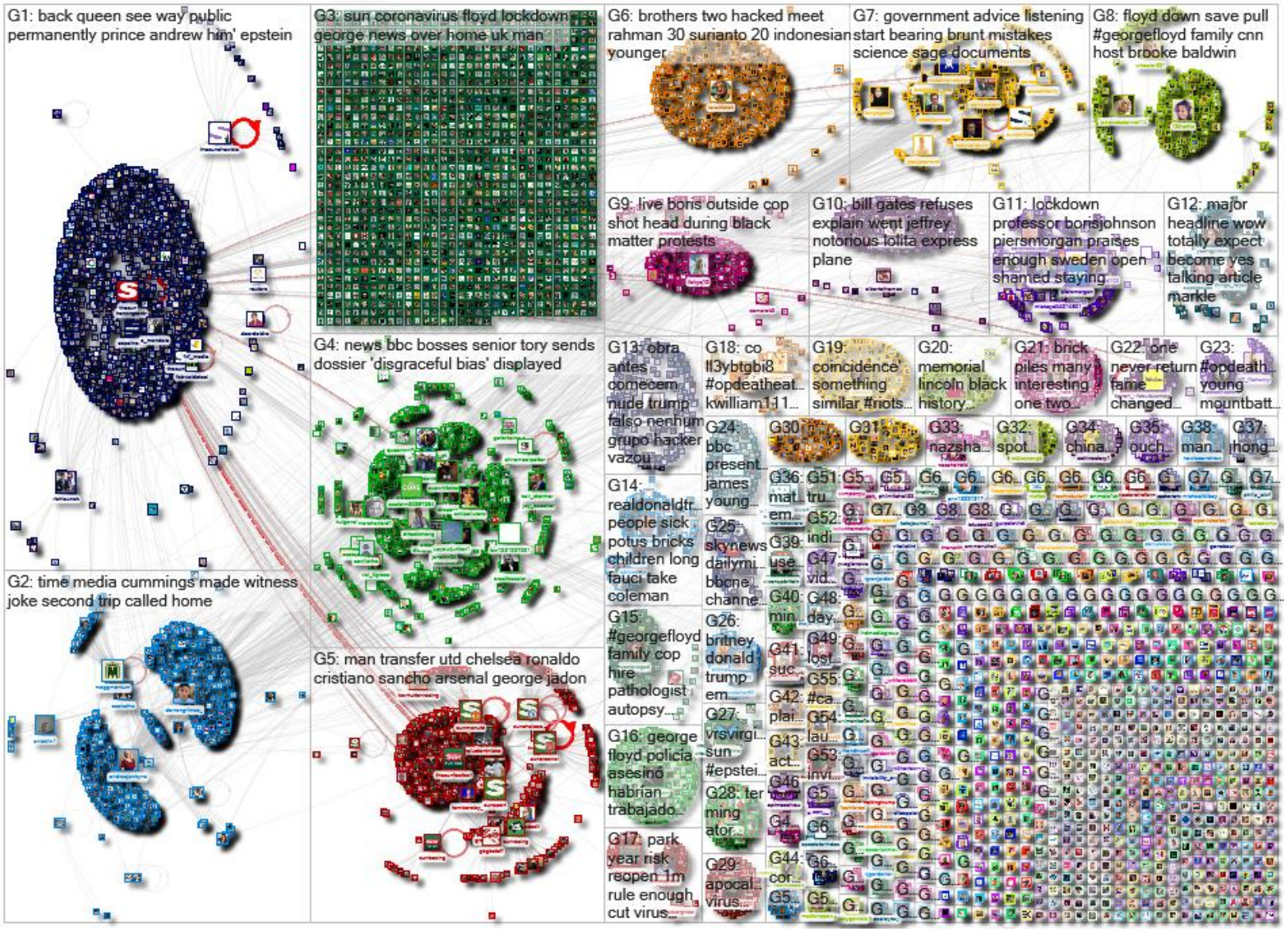


TO CONSIDER BEFORE GETTING DATA:

- Goal → Time management
- Context
- API architecture
- Query design

Don‘t be scared!

Twitter User Networks

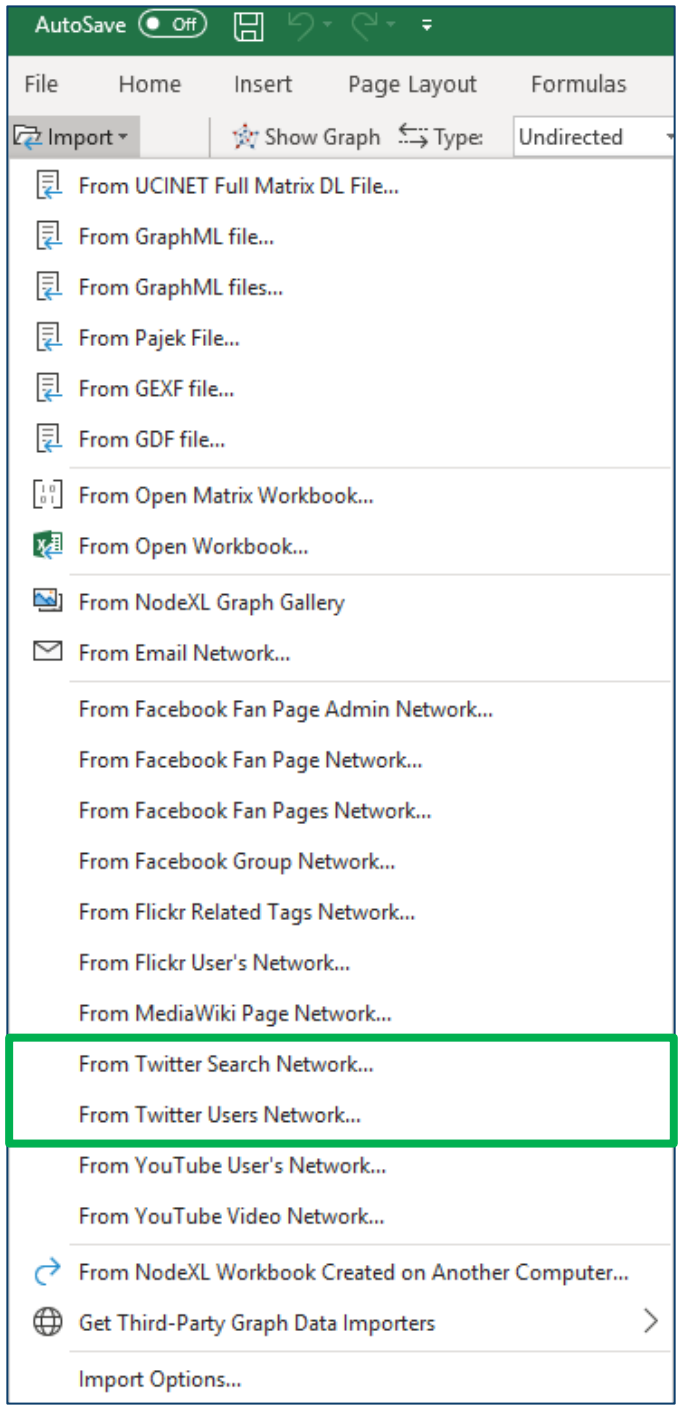


Vertex = Twitter User

Edge Relationships

- Tweet (= self-loop)
- Mentions
- Replies-to
- Retweets
- (follows)

Search term url:thesun.co.uk on June 3, 2020: https://nodexlgraphgallery.org/Pages/Graph.aspx?graphID=228728



Twitter Data Importers

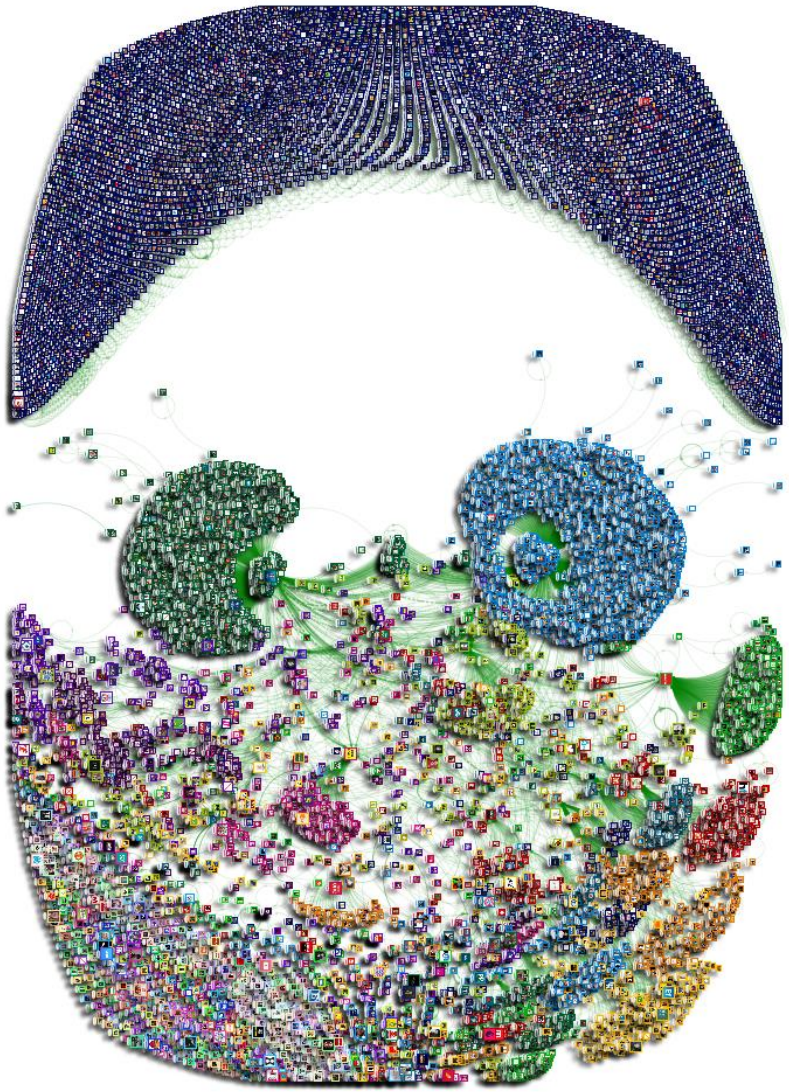
From Twitter Search Network…

- max. 18,000 tweets per search
- past max. 9-10 days from date of query
- Reduced data volumes for trending topics

From Twitter Users Network…

- max. 3,200 tweets per user
- Going backwards in time, no time limit
- Time limit for large data downloads (15-minute intervals pause-and-resume)

→ Combine both importers for deep insights



How to find insights…

There is no magic key! Don‘t get lost in data!

Levels of analysis

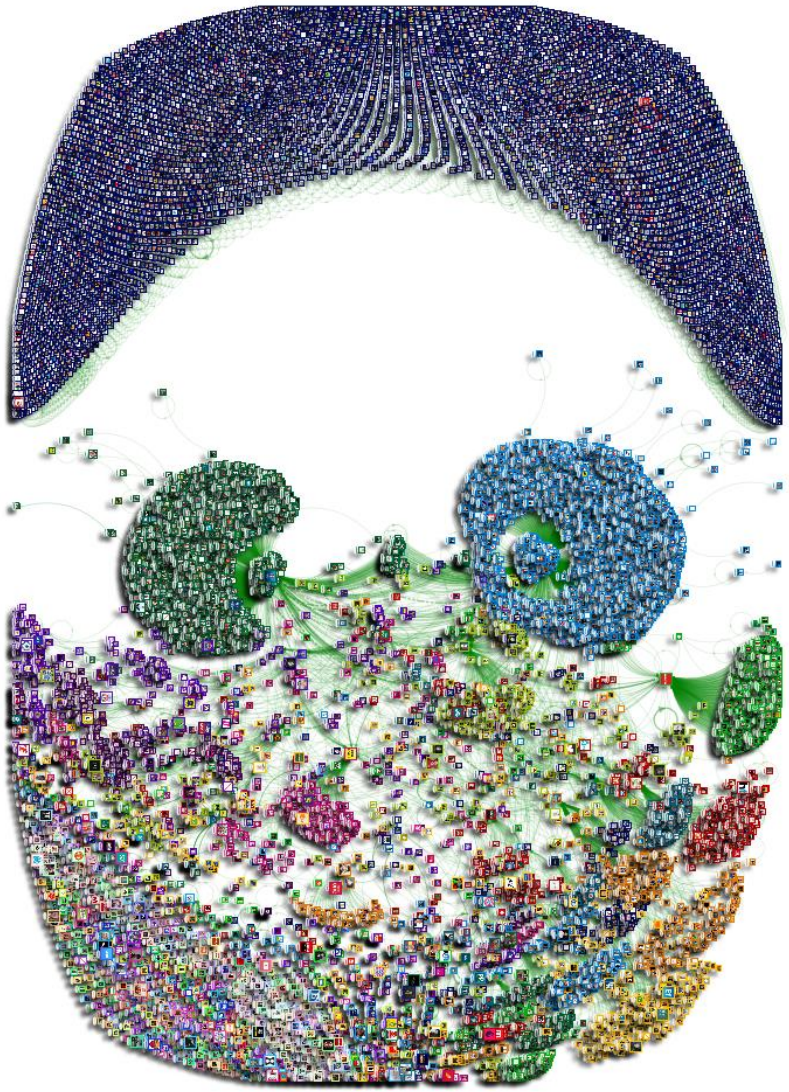
- Visual network analysis (graph)
- Content analysis (graph + table)
- Data analysis (table)

Network levels

- Overall: What is the shape of the network?
- Cluster: Why is a group clustered?
- User: Who is influential?
- Tweet: What is it all about?

Compare over time

- Do you find reocurring patterns?



Other Tools

Twitter User Analysis

- Luca Hammer Account Analysis: https://accountanalysis.app/
- Botometer: https://botometer.iuni.iu.edu/#!/
- Trendsmap: https://www.trendsmap.com/

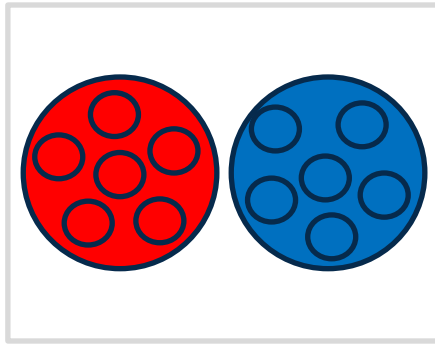
Other NodeXL Tutorials

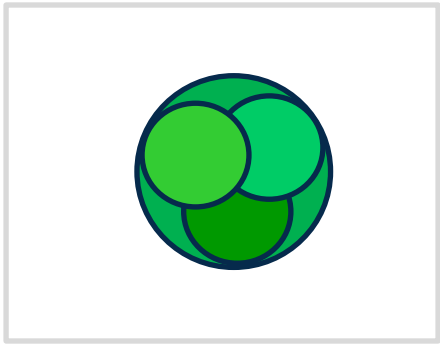
- Semantic Networks – Create networks with words, hashtags or video tags
- Working with Twitter User lists

https://www.smrfoundation.org/nodexl/tutorials/

Social Media Network Shapes

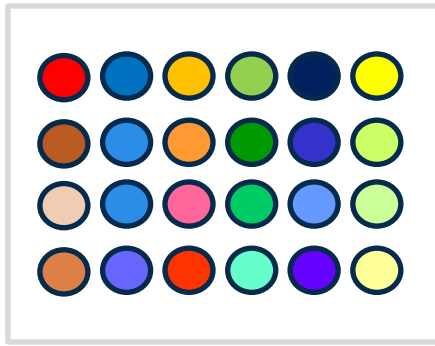
[Divided]
Polarized Crowds





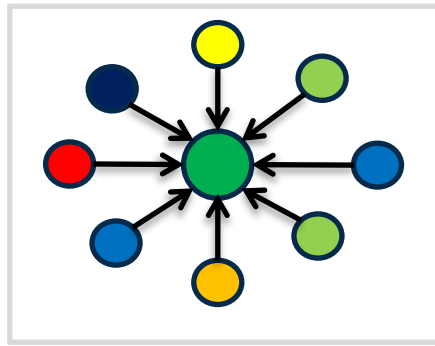
[Unified]
Tight Crowd

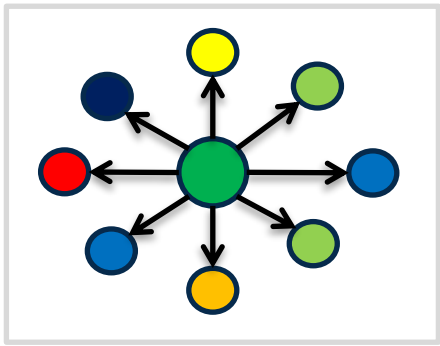
[Fragmented]
Brand Clusters



[Clustered]
Community Clusters

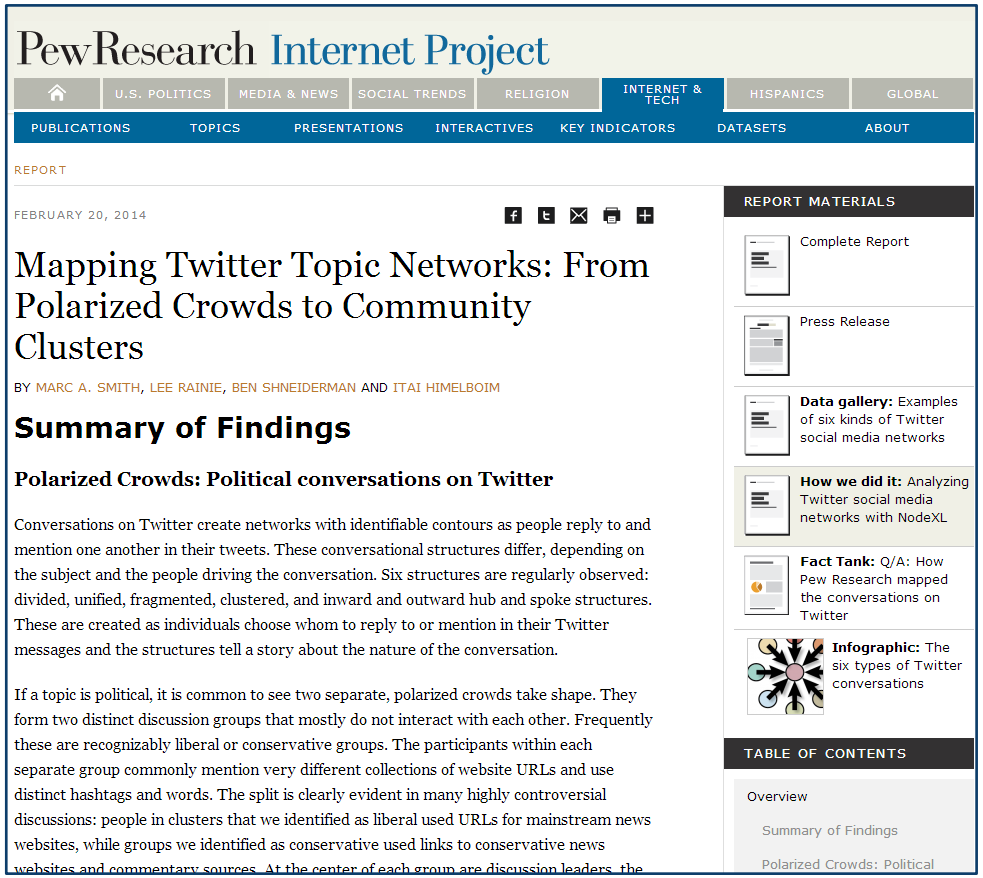
[In-Hub & Spoke]
Broadcast Network





[Out-Hub & Spoke]
Support Network

Social Media Network Shapes



PewResearch Internet Project

U.S. POLITICS | MEDIA & NEWS | SOCIAL TRENDS | RELIGION | INTERNET & TECH | HISPANICS | GLOBAL

PUBLICATIONS | TOPICS | PRESENTATIONS | INTERACTIVES | KEY INDICATORS | DATASETS | ABOUT

REPORT

FEBRUARY 20, 2014

Mapping Twitter Topic Networks: From Polarized Crowds to Community Clusters

BY MARC A. SMITH, LEE RAINIE, BEN SHNEIDERMAN AND ITAI HIMELBOIM

Summary of Findings

Polarized Crowds: Political conversations on Twitter

Conversations on Twitter create networks with identifiable contours as people reply to and mention one another in their tweets. These conversational structures differ, depending on the subject and the people driving the conversation. Six structures are regularly observed: divided, unified, fragmented, clustered, and inward and outward hub and spoke structures. These are created as individuals choose whom to reply to or mention in their Twitter messages and the structures tell a story about the nature of the conversation.

If a topic is political, it is common to see two separate, polarized crowds take shape. They form two distinct discussion groups that mostly do not interact with each other. Frequently these are recognizably liberal or conservative groups. The participants within each separate group commonly mention very different collections of website URLs and use distinct hashtags and words. The split is clearly evident in many highly controversial discussions: people in clusters that we identified as liberal used URLs for mainstream news websites, while groups we identified as conservative used links to conservative news websites and commentary sources. At the center of each group are discussion leaders, the

REPORT MATERIALS

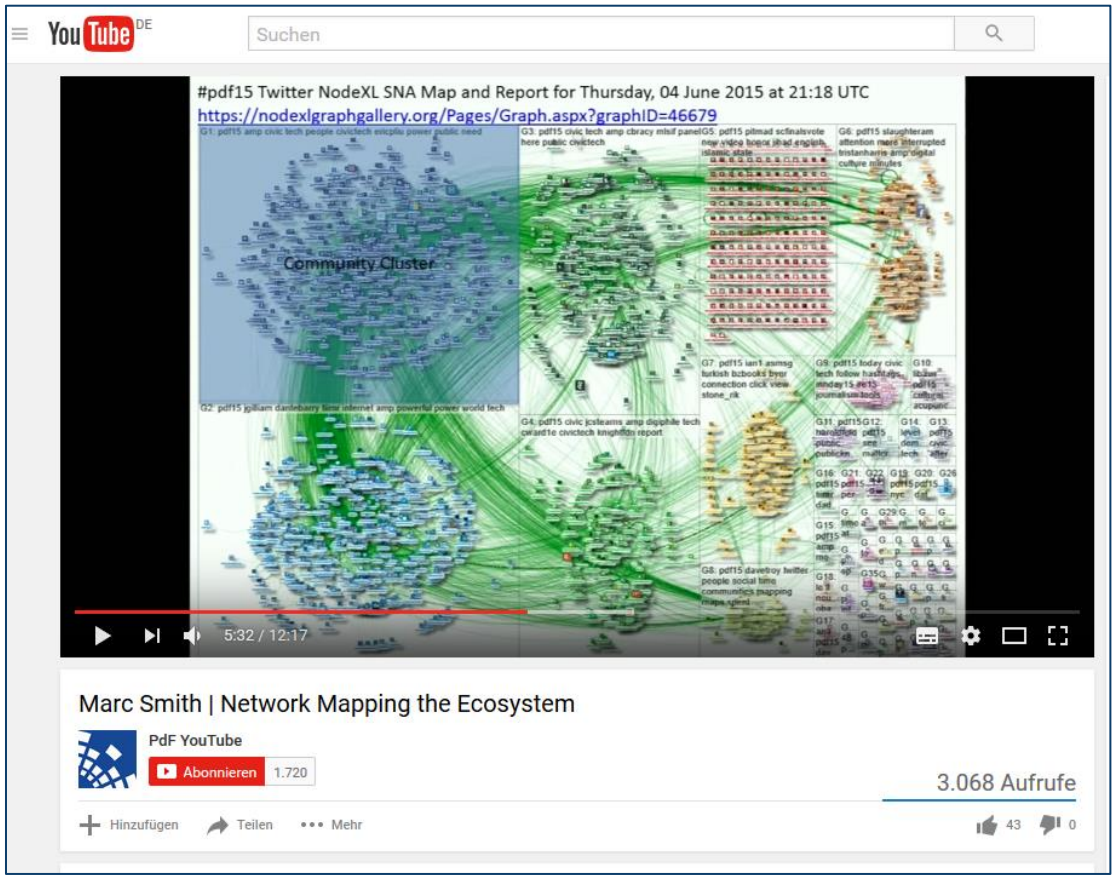
- Complete Report
- Press Release
- **Data gallery:** Examples of six kinds of Twitter social media networks
- **How we did it:** Analyzing Twitter social media networks with NodeXL
- **Fact Tank:** Q/A: How Pew Research mapped the conversations on Twitter
- **Infographic:** The six types of Twitter conversations

TABLE OF CONTENTS

Overview

Summary of Findings

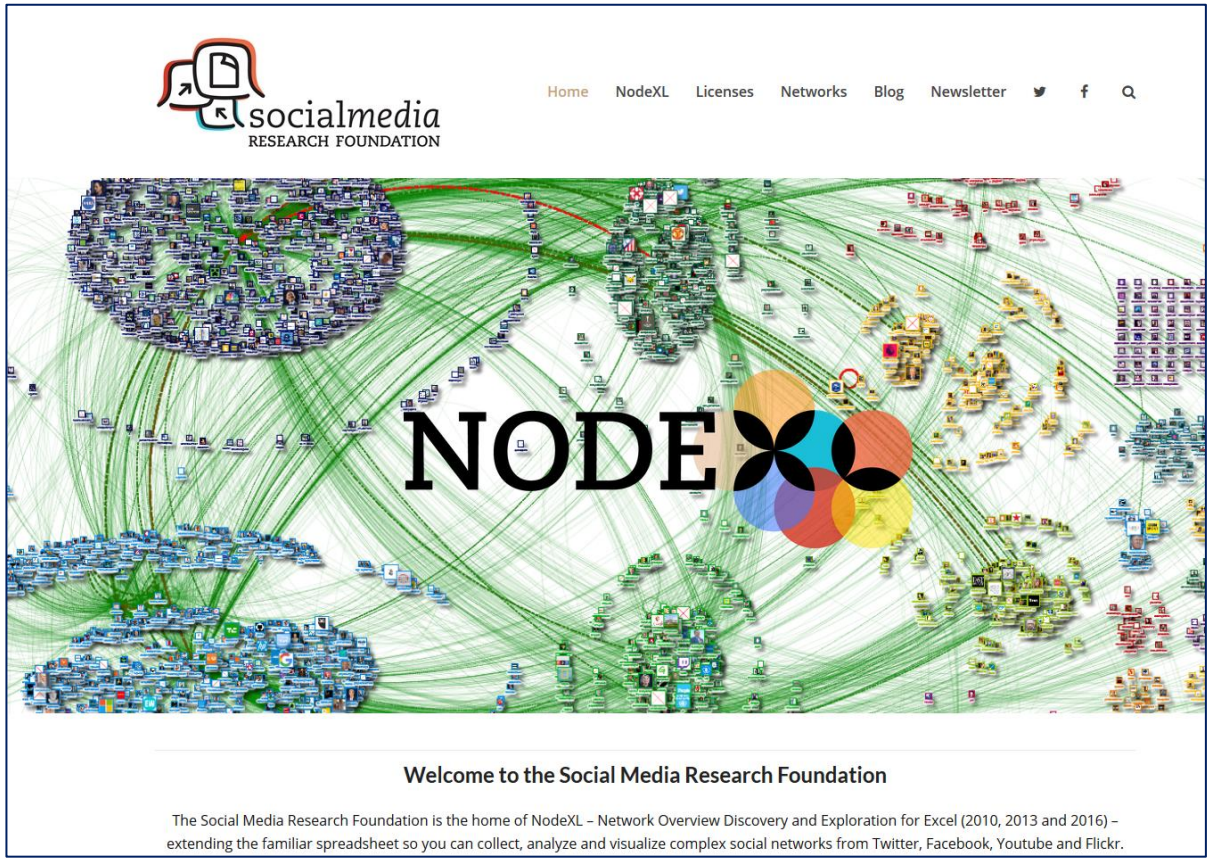
Polarized Crowds: Political

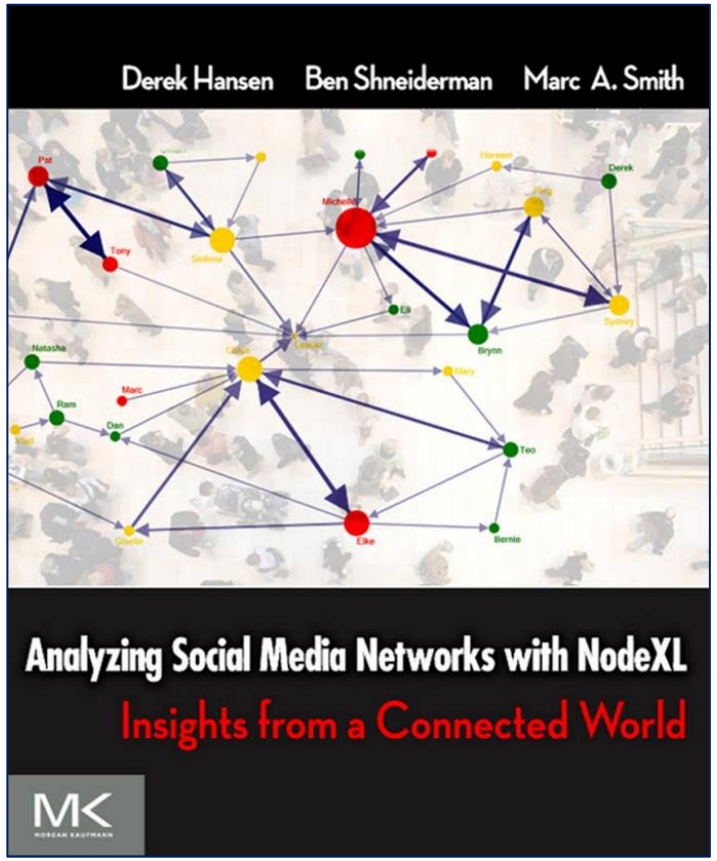


PEW Report: Mapping Twitter Topic Networks: From Polarized Crowds to Community Clusters. PEW Research Report 2014: http://www.pewinternet.org/2014/02/20/mapping-twitter-topic-networks-from-polarized-crowds-to-community-clusters/

Video: SMRF Director Marc Smith | Network Mapping the Ecosystem: https://www.youtube.com/watch?v=kDiGl-2m868

Social Media Research Foundation





Find more tutorials here:
https://www.smrfoundation.org/nodexl/tutorials/
https://www.nodexlgraphgallery.org/

Book: Derek Hansen, Ben Shneiderman and Marc Smith (2020): Analyzing Social Media Networks with NodeXL: https://www.elsevier.com/books/analyzing-social-media-networks-with-nodexl/hansen/978-0-12-817756-3

Literature / Links

Social Media Research Foundation and NodeXL

- Social Media Research Foundation: http://www.smrfoundation.org/
- NodeXL Graph Gallery: https://nodexlgraphgallery.org/
- Marc Smith | Network Mapping the Ecosystem: https://www.youtube.com/watch?v=kDiGl-2m868
- How to Automate NodeXL Pro: https://www.youtube.com/watch?v=mjAq8eA7uOM
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