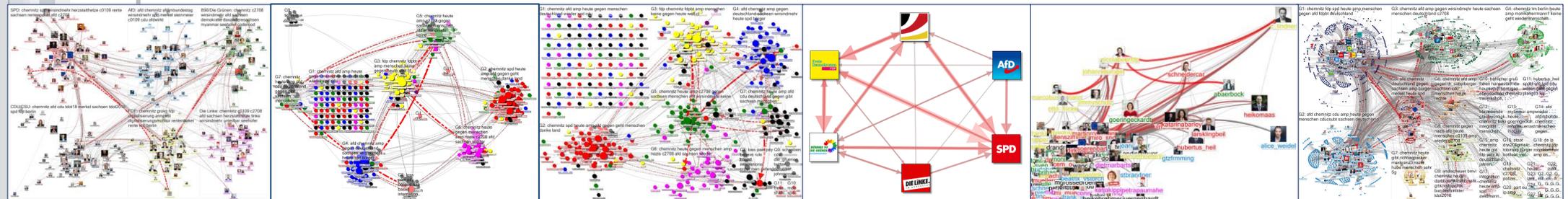


NODEXL PRO TUTORIAL : MAPPING POLITICAL NETWORKS WITH TWITTER USER NETWORK DATA



A project from the  socialmedia
RESEARCH FOUNDATION

ABOUT THIS TUTORIAL



This NodeXL Pro Tutorial is associated with the **Research Project: Mapping Political Networks** initiated by the Social Media Research Foundation.

In a series of studies we will explore Twitter networks based on Tweets published by politicians in regional, national and international parliaments.

This tutorial is based on a **case study with 512 Twitter accounts from the German Bundestag**. The presented method can be adapted easily to analyze any other parliament.

All related network maps can be found in NodeXL Graph Gallery under [#nxlBundestag](#).

Tutorial requirements:

- Windows Excel
- NodeXL Pro User license
- Twitter account

Necessary background information:

How to automate NodeXL Pro (Video Tutorial):
<https://www.youtube.com/watch?v=mjAq8eA7uOM>

More information on NodeXL:

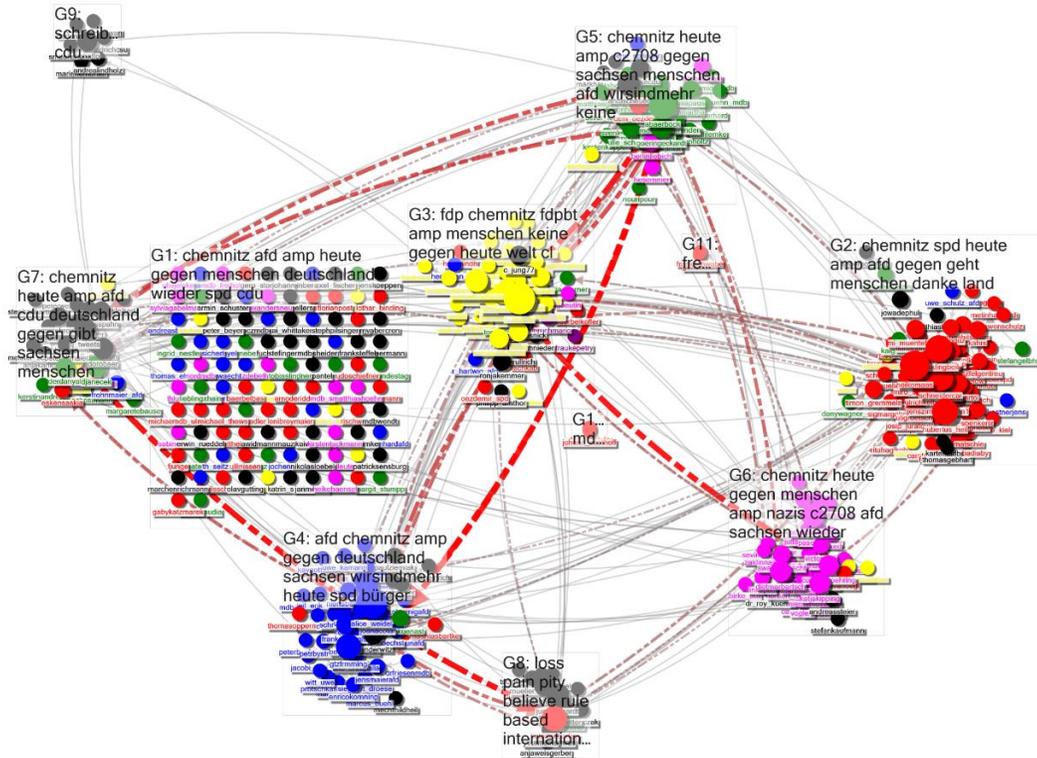
<https://www.smrfoundation.org>

Find NodeXL Pro network reports and maps:

<https://nodexlgraphgallery.org>

CONTENT OVERVIEW

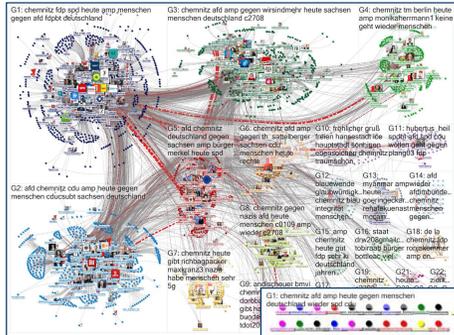
1. Political Network Maps
2. The Seed List
3. Data Import Options
4. Full Network Map
5. Coalition Network Map
6. Party Network Map
7. Party Interaction Map
8. Further Research



1. POLITICAL NETWORK MAPS

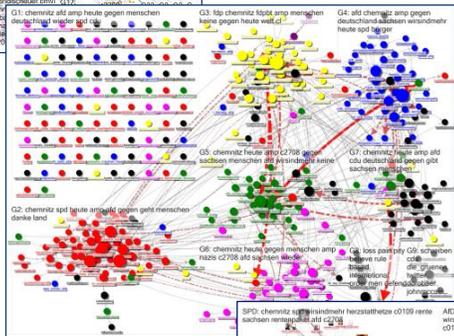
Full Network Map

This network map is the result of a full social network and content analysis summarizing recent tweets from all politicians in a parliament.



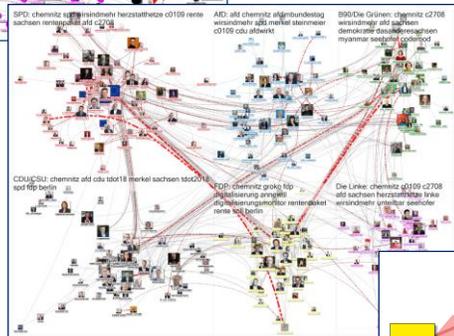
Coalition Network Map

When politicians are algorithmically clustered into groups, and then colored by party affiliation, the resulting network map may show current Twitter coalitions.



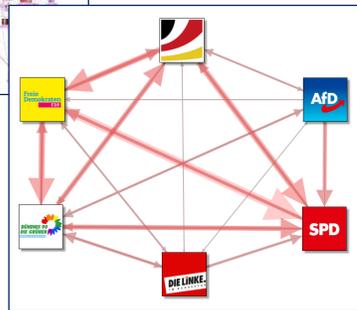
Party Network Map

Grouping the politicians by party affiliation allows a focused analysis of each party, resulting in a network map with one group for each party.



Party Interaction Map

Derived from the party network dataset, this network map shows interactions between the parties.



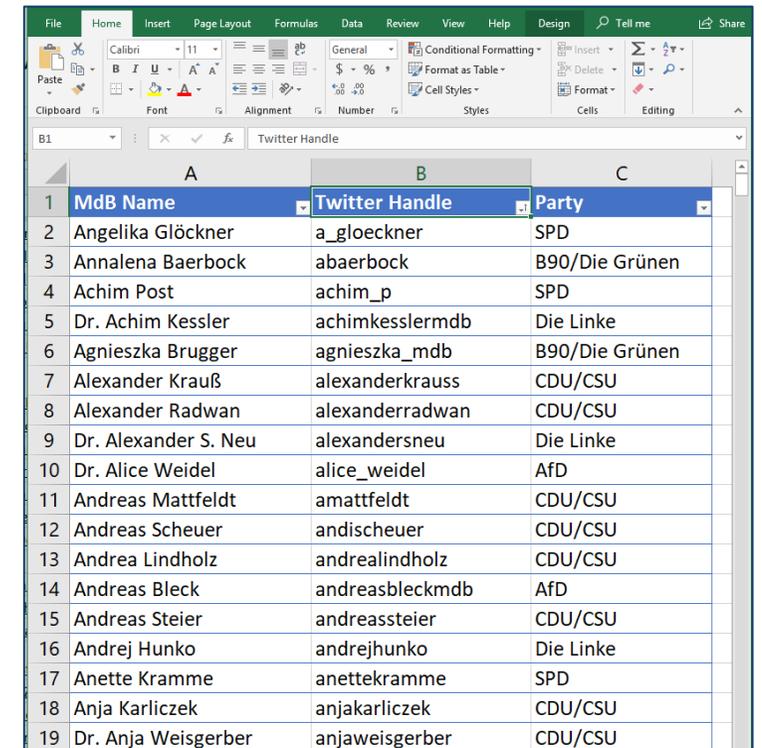
2. THE SEED LIST

Starting point of any analysis with the NodeXL Pro Twitter Users Network importer is a list of Twitter handles we refer to as the **seed list**. Creating such a list is probably the most time-consuming step of all.

1. Find a list on Twitter: Many news agencies have Twitter lists that are available for download via the NodeXL Pro Twitter Users Network Importer (e.g.: <https://twitter.com/cspan/lists/senators>)

Note: Usually there is no information on when such a list was created or last updated, therefore we recommend you to create your own list.

2. Create your own seed list: Start your own table with the name of the politician, the respective Twitter handle and the party affiliation (see on the right).



| | A | B | C |
|----|----------------------|-----------------|----------------|
| 1 | MdB Name | Twitter Handle | Party |
| 2 | Angelika Glöckner | a_gloeckner | SPD |
| 3 | Annalena Baerbock | abaerbock | B90/Die Grünen |
| 4 | Achim Post | achim_p | SPD |
| 5 | Dr. Achim Kessler | achimkesslermdb | Die Linke |
| 6 | Agnieszka Brugger | agnieszka_mdb | B90/Die Grünen |
| 7 | Alexander Krauß | alexanderkrauss | CDU/CSU |
| 8 | Alexander Radwan | alexanderradwan | CDU/CSU |
| 9 | Dr. Alexander S. Neu | alexandersneu | Die Linke |
| 10 | Dr. Alice Weidel | alice_weidel | AfD |
| 11 | Andreas Mattfeldt | amattfeldt | CDU/CSU |
| 12 | Andreas Scheuer | andischeuer | CDU/CSU |
| 13 | Andrea Lindholz | andrealindholz | CDU/CSU |
| 14 | Andreas Bleck | andreasbleckmdb | AfD |
| 15 | Andreas Steier | andreassteier | CDU/CSU |
| 16 | Andrej Hunko | andrejhunko | Die Linke |
| 17 | Anette Kramme | anettekramme | SPD |
| 18 | Anja Karliczek | anjakarliczek | CDU/CSU |
| 19 | Dr. Anja Weisgerber | anjaweisgerber | CDU/CSU |

3. DATA IMPORT OPTIONS

Import from Twitter Users Network

[This might take a long time. Twitter rate limiting](#)

Twitter users I'm interested in

The Twitter users with these usernames:

(Separate with spaces, commas or returns)

The Twitter users in this Twitter List:

What to import

Basic network
Show who was mentioned or replied to in the users' recent tweets
[More about this option](#)

Basic network plus friends and followers (very slow!)
Add some of the users' friends and followers
[More about this option](#)

Import only the Twitter users I'm interested in

Your Twitter account

I have a Twitter account, but I have not yet authorized NodeXL to use my account to import Twitter networks. Take me to Twitter's authorization Web page.

I have a Twitter account, and I have authorized NodeXL to use my account to import Twitter networks.

Limit to recent tweets per user

Limit friends and followers to per user

Expand URLs in recent tweets (slower)

Extended analysis: perform a second pass on the collected Tweets to ensure that all Retweets are collected and all RetweetedIDs are correct. (Slow)

All data will be collected with the **NodeXL Pro Twitter Users Network Importer**.

The maximum number of available Tweets per user is 3,200.

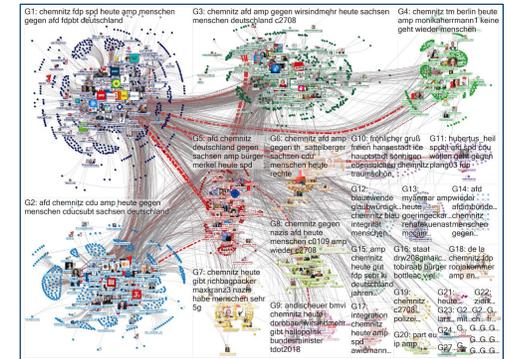
Checking or unchecking the box **Import only the Twitter users I'm interested in** will result in two different datasets that are based on the same tweets:

Full network data (box unchecked)

Edge data includes edges to all Twitter users mentioned in tweets by users in seed list.

e.g. Users in seed list: 512

Vertices in network: 2,976

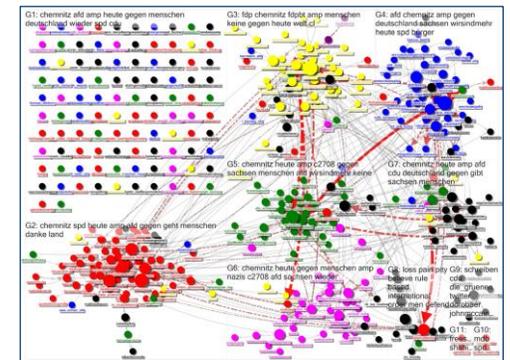


Internal network data (box checked)

This is a subset of the full network dataset. Edge data contains only edges between users in the seed list.

e.g. Users in seed list: 512

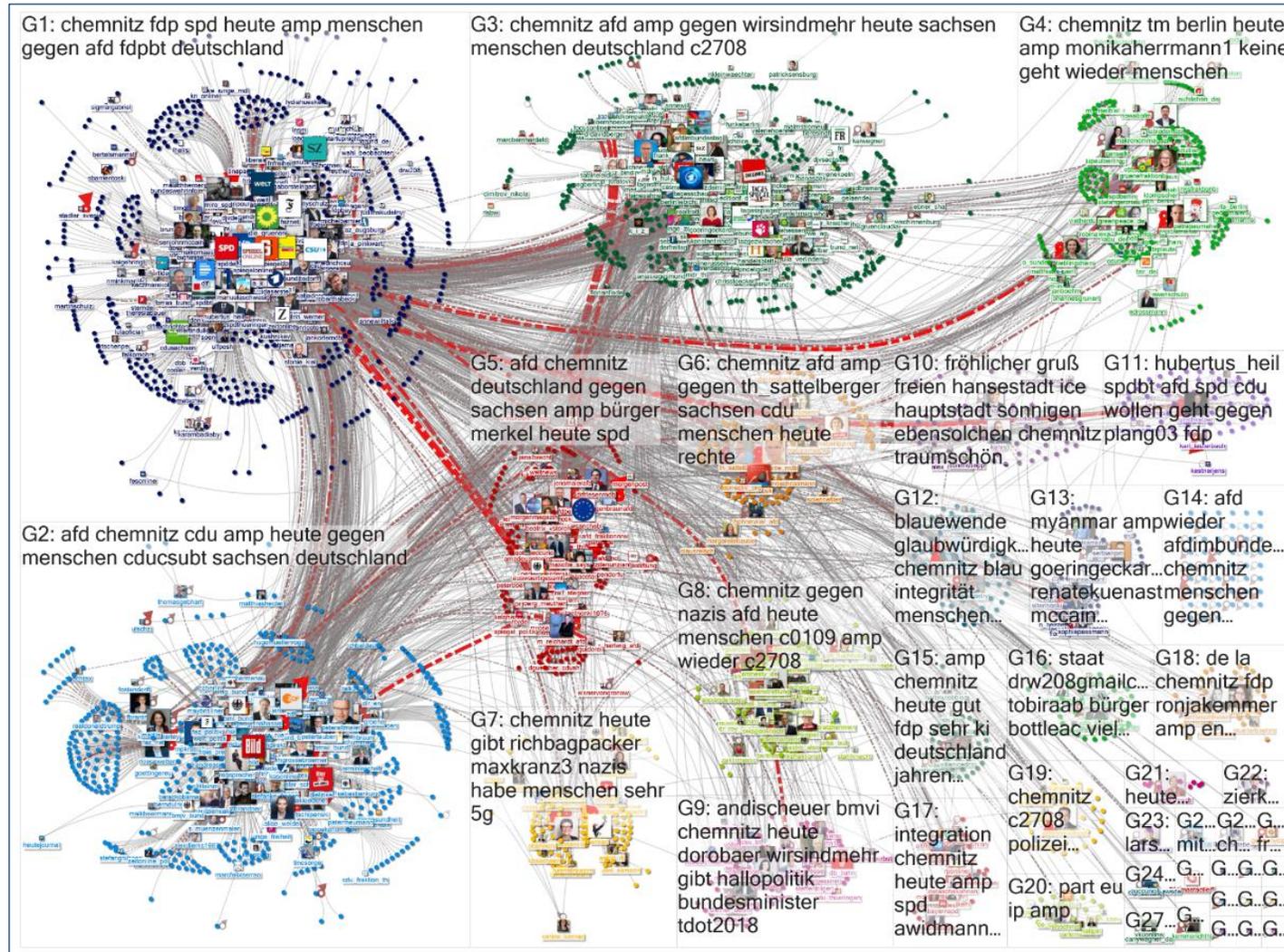
Vertices in network: 512



4. FULL NETWORK MAP

Workflow

- Step 1: Import data
- Step 2: Prepare data
- Step 3: Automate



<https://nodexlgraphgallery.org/Pages/Graph.aspx?graphID=167637>



4. FULL NETWORK MAP – IMPORT DATA

1. Open a new NodeXL file and save it to your machine (e.g. MdB External Network 2018-09-12 raw data).
2. Make sure automation after data import is turned off (**Data > Import > Import Options**).
3. Open **Data > Import > Import from Twitter Users network**.
4. Enter the Twitter handles from your seed list into the search field.
5. Choose the importer setup on the right. Make sure to limit the number of tweets to 100.
6. Click **OK** and wait. Downloading 100 tweets from 500 users each will take about 3 hours.
7. Save the file after the download is finished.

Import from Twitter Users Network

[This might take a long time: Twitter rate limiting](#)

Twitter users I'm interested in

The Twitter users with these usernames:

a_gloeckner abaerbock achim_p achimkeslemdb agnieszka_mdb alexanderkrauss alexanderadwan alexandersneu alice_weidel amattfeldt andischeuer andrealindholz andreasbleckmdb andreassteier

(Separate with spaces, commas or returns)

The Twitter users in this Twitter List:

bob/bobs

What to import

Basic network
Show who was mentioned or replied to in the users' recent tweets
[More about this option](#)

Basic network plus friends and followers (very slow!)
Add some of the users' friends and followers
[More about this option](#)

Import only the Twitter users I'm interested in

Replies To

Mentions

Replies To

Mentions

Mentions

Your Twitter account

I have a Twitter account, but I have not yet authorized NodeXL to use my account to import Twitter networks. Take me to Twitter's authorization Web page.

I have a Twitter account, and I have authorized NodeXL to use my account to import Twitter networks.

Limit to 100 recent tweets per user

Expand URLs in recent tweets (slower)

Extended analysis: perform a second pass on the collected Tweets to ensure that all Retweets are collected and all RetweetedIDs are correct. (Slow!)

OK Cancel

4. FULL NETWORK MAP – PREPARE DATA

In order to analyze the most recent Twitter discussions, you should remove old tweets from the dataset. The past 7 to 10 days before the date of your data collection is a reasonable time frame in relation to the maximum number of 100 collected Tweets per user.

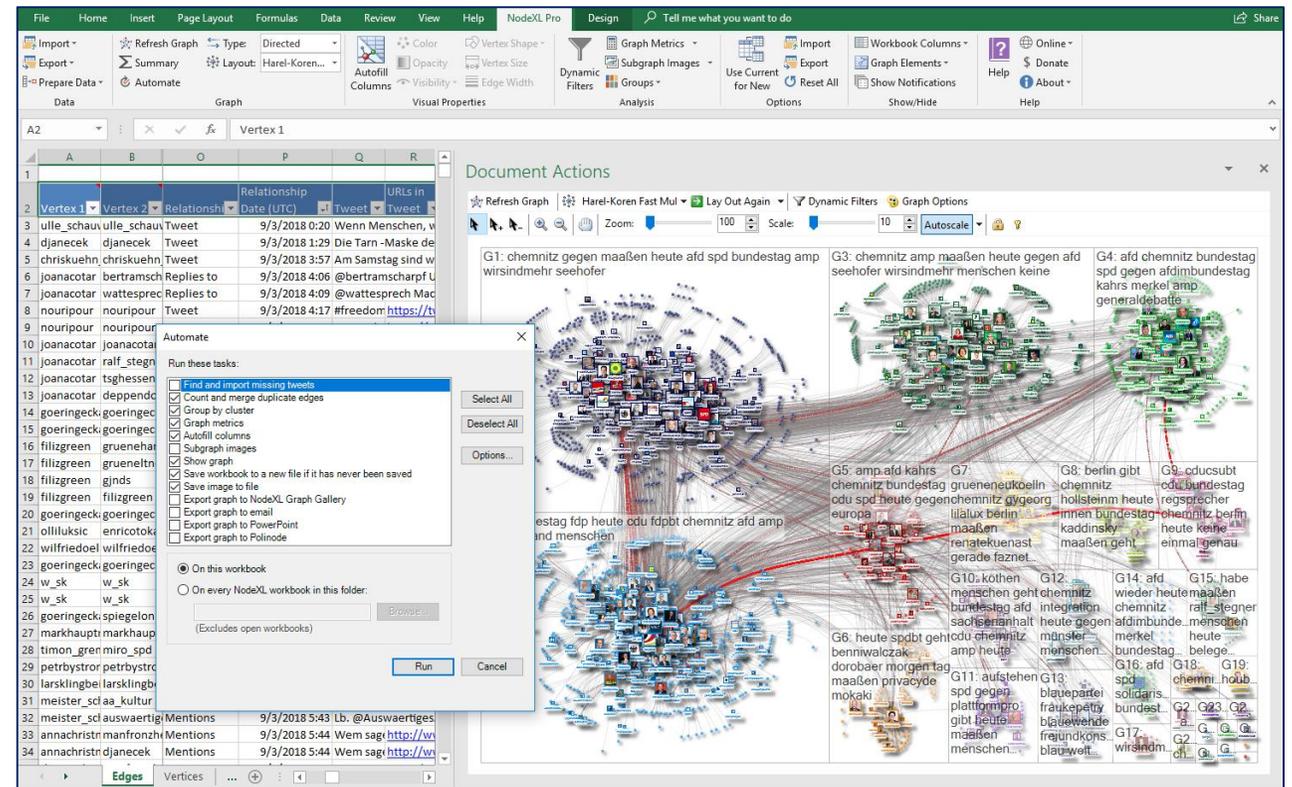
1. Save the raw data file to a new file and add your time frame to the file name: e.g. MdB External Network 2018-09-12 since 2018-09-03
2. Sort the edges spreadsheet by **Column P** (Relationship Date (UTC)).
3. Click **Show/Hide > Workbook Columns > Visual Properties**
4. In **Column G** (Visibility) copy and paste **Skip** into all rows you want to exclude from the analysis. Alternatively, you can delete these edges from the dataset for better data handling, but this is usually not recommended.

| | A | B | G | N | O |
|-------|--------------|--------------|------------|---------------------------|---------------|
| 1 | | | | Other Columns | |
| 2 | Vertex 1 | Vertex 2 | Visibility | Add Your Own Columns Here | Relationships |
| 19520 | oezoguz | oezoguz | Skip | | Tweet |
| 19521 | kleikert | kleikert | Show | | Tweet |
| 19522 | peteraumer | peteraumer | Skip | | Tweet |
| 19523 | mechthildh | mechthildh | Hide | | Tweet |
| 19524 | reuther_beic | reuther_beic | 1 | | Mentions |
| | | | 0 | | |
| | | | 2 | | |
| 19525 | schickgerha | schickgerha | Skip | | Tweet |
| 19526 | larscastellu | larscastellu | Skip | | Tweet |
| 19527 | langemdb | langemdb | Skip | | Tweet |
| 19528 | lindateuteb | lindateuteb | Skip | | Tweet |
| 19529 | metinhakve | metinhakve | Skip | | Tweet |
| 19530 | lier_e | lier_e | Skip | | Tweet |
| 19531 | oezoguz | oezoguz | Skip | | Tweet |
| 19532 | oezoguz | oezoguz | Skip | | Tweet |
| 19533 | oezoguz | oezoguz | Skip | | Tweet |
| 19534 | matthiasbai | matthiasbai | Skip | | Tweet |
| 19535 | peterboehrs | sven_kindle | Skip | | Mentions |
| 19536 | baerbelbas | baerbelbas | Skip | | Tweet |
| 19537 | ch_buchhol | ch_buchhol | Skip | | Tweet |
| 19538 | mi_muente | mi_muente | | | Tweet |
| 19539 | mi_muente | mi_muente | | | Tweet |
| 19540 | michael_the | michael_the | | | Tweet |
| 19541 | loetzschmd | loetzschmd | | | Tweet |

4. FULL NETWORK MAP – AUTOMATE

The automation file used for this analysis can be downloaded in the NodeXL Graph Gallery at the bottom of this page:
<https://nodexlgraphgallery.org/Pages/Graph.aspx?graphID=167637>

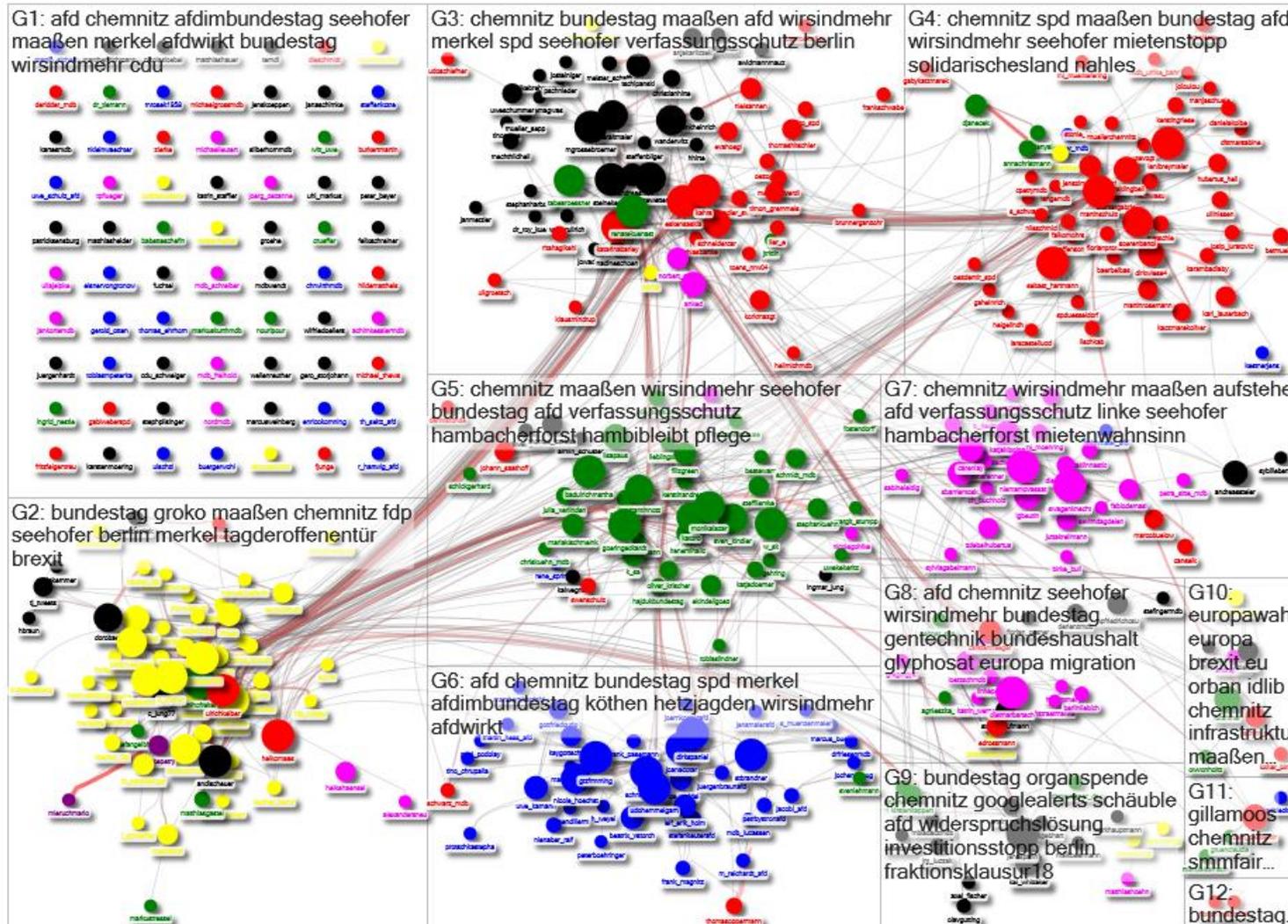
1. To import the automation file into NodeXL go to **Options > Import** and choose the options file you have just downloaded.
2. Click on **Graph > Automate** to open the Automate window.
3. Click **Run** and wait. Processing 10,000 tweets may take a few hours depending on RAM and CPU of your machine.
4. The resulting network map will be saved to the Excel file in PNG format as part of the automation process. You can specify image options with a right-click in the graph window and select **Save Image to File > Image options**.



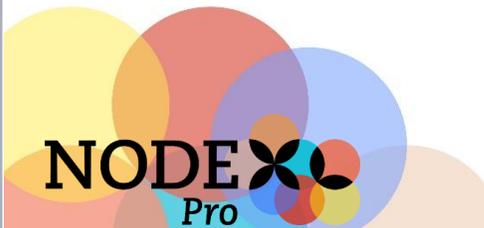
5. COALITION NETWORK MAP

Workflow

- Step 1: Import data
- Step 2: Prepare data
- Step 3: Automate
- Step 4: Color Vertices



<https://nodexlgraphgallery.org/Pages/Graph.aspx?graphID=167559>



5. COALITION NETWORK MAP – IMPORT DATA

1. Open a new NodeXL file and save it to your machine (e.g. MdB Internal Network 2018-09-12 raw data)
2. Choose the importer setup on the right. Make sure to check the box: **Import only the Twitter users I'm interested in.**
3. After data download, save the file and then set the time frame to prepare the data for automation.

Import from Twitter Users Network

This might take a long time: [Twitter rate limiting](#)

Twitter users I'm interested in

The Twitter users with these usernames:

a_gloeckner abaerbock achim_p achimkesslembd agnieszka_mdb alexanderkrauss alexanderradwan alexandersneu alice_weidel amattfeldt andischeuer andrealindholz andreasbleckmbd andreassteier

(Separate with spaces, commas or returns)

The Twitter users in this Twitter List:

bob/bobs

What to import

Basic network
Show who was mentioned or replied to in the users' recent tweets
[More about this option](#)

Basic network plus friends and followers (very slow!)
Add some of the users' friends and followers
[More about this option](#)

Import only the Twitter users I'm interested in

Your Twitter account

I have a Twitter account, but I have not yet authorized NodeXL to use my account to import Twitter networks. Take me to Twitter's authorization Web page.

I have a Twitter account, and I have authorized NodeXL to use my account to import Twitter networks.

Limit to 100 recent tweets per user

Expand URLs in recent tweets (slower)

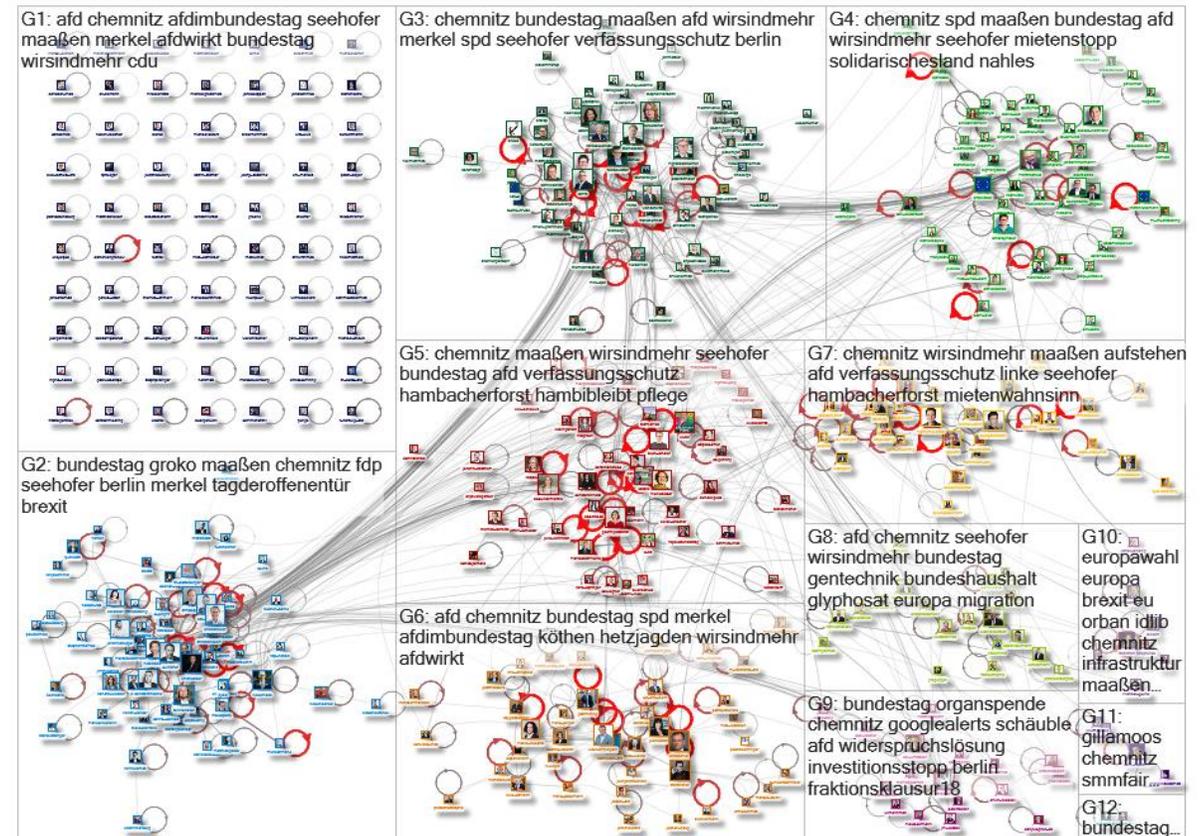
Extended analysis: perform a second pass on the collected Tweets to ensure that all Retweets are collected and all RetweetedIDs are correct. (Slow!)

OK Cancel

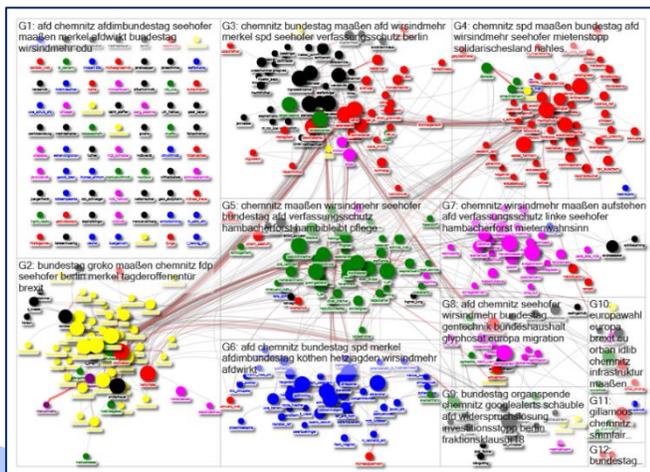
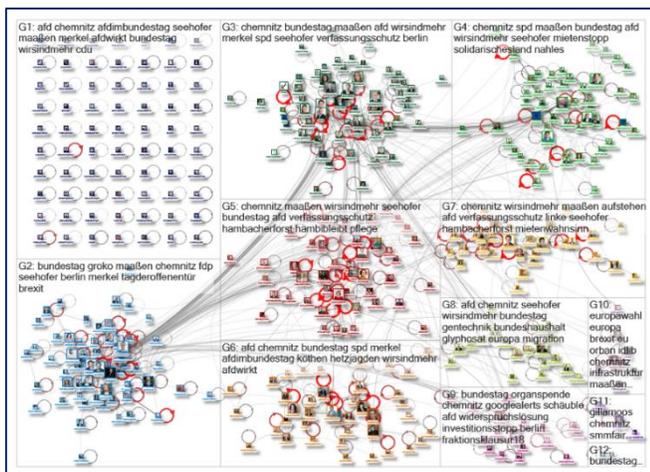
5. COALITION NETWORK MAP – AUTOMATE

The automation file used for this analysis can be found in the NodeXL Graph Gallery at the bottom of this page:
<https://nodexlgraphgallery.org/Pages/Graph.aspx?graphID=167535>

1. Import the options file above, **Automate** and wait for automation to finish. **Note:** Do not use the „Find and import missing tweets“ feature because it will add new vertices to the dataset.
2. The vertex colors in the resulting network map are currently set in the Groups spreadsheet based on the detected clusters (see on the right).
3. In the next step we will set the vertex colors to align with the party affiliation.

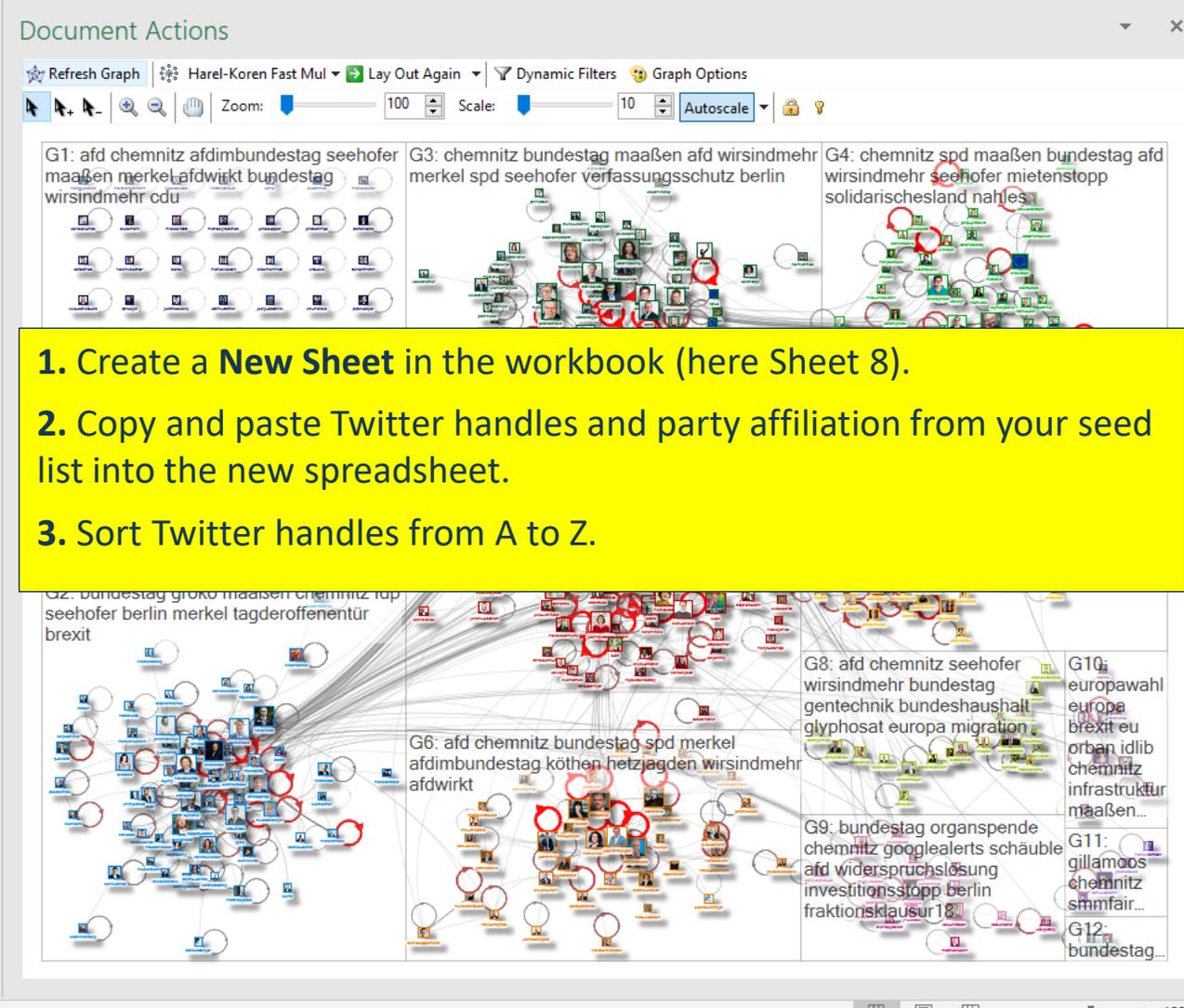


5. COALITION NETWORK MAP – COLOR VERTICES

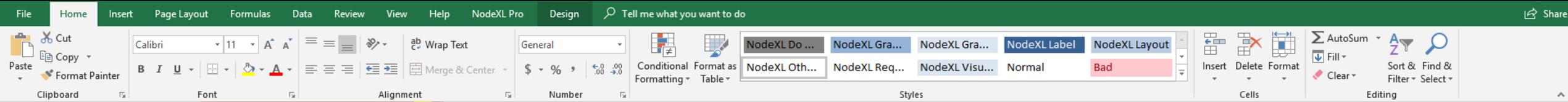


1. Create a **New Sheet** in the workbook (here Sheet 8).
2. Copy and paste Twitter handles and party affiliation from your seed list into the new spreadsheet.
3. Sort Twitter handles from A to Z.
4. In the vertices worksheet sort **column A (Vertex)** from A to Z.
5. Go to **column AC** and name it e.g. Party.
6. Fill in the formula into cell AC 3:
=VLOOKUP([@Vertex],Table24[#All],2) to link to the Twitter handles in the newly created worksheet.
7. Sort worksheet by **column AC (Party)**.
8. Copy and paste party colors into each row of **column B (Color)** in relation to **column AC (Party)**
9. Open **Analysis > Groups > Group options** and check the box „Colors specified in the Color column of the Vertices worksheet“.
10. Open **Graph Options > Vertices** and set **Shape** from **Image** to **Disk**.
11. Refresh Graph.

| 1 | Twitter Handle | Party |
|----|-----------------|----------------|
| 2 | a_gloeckner | SPD |
| 3 | abaerbock | B90/Die Grünen |
| 4 | achim_p | SPD |
| 5 | achimkesslermdb | Die Linke |
| 6 | agnieszka_mdb | B90/Die Grünen |
| 7 | alexanderkrauss | CDU/CSU |
| 8 | alexanderradwan | CDU/CSU |
| 9 | alexandersneu | Die Linke |
| 10 | alice_weidel | AfD |
| 11 | amattfeldt | CDU/CSU |
| 12 | andischeuer | CDU/CSU |
| 13 | andrealindholz | CDU/CSU |
| 14 | andreasbleckmdb | AfD |
| 15 | andreassteier | CDU/CSU |
| 16 | andrejhunko | Die Linke |
| 17 | anettekramme | SPD |
| 18 | anjakarliczek | CDU/CSU |
| 19 | anjaweisgerber | CDU/CSU |
| 20 | anked | Die Linke |
| 21 | annschwimmert | B90/Die Grünen |



1. Create a **New Sheet** in the workbook (here Sheet 8).
2. Copy and paste Twitter handles and party affiliation from your seed list into the new spreadsheet.
3. Sort Twitter handles from A to Z.



| | A | Z | AC | AD |
|----|-----------------|---------------------------|----------------|-------------|
| 1 | | | Other Columns | |
| 2 | Vertex | Reciprocated Vertex Ratio | Party | Name Follow |
| 3 | a_gloeckner | | SPD | Angelika C |
| 4 | abaerbock | 0.000 | B90/Die Grünen | Annalena |
| 5 | achim_p | 0.000 | SPD | Achim Po |
| 6 | achimkesslermdb | Not Applicable | Die Linke | Dr. Achim |
| 7 | agnieszka_mdb | 0.000 | B90/Die Grünen | Agnieszka |
| 8 | alexanderkrauss | | CDU/CSU | alexander |
| 9 | alexanderradwan | | CDU/CSU | Alexander |
| 10 | alexandersneu | 0.000 | Die Linke | Alexander |
| 11 | alice_weidel | 0.000 | AfD | Alice Weid |
| 12 | amattfeldt | | CDU/CSU | AMattfeld |
| 13 | andischeuer | 0.000 | CDU/CSU | Andreas S |
| 14 | andrealindholz | | CDU/CSU | Andrea Li |
| 15 | andreasbleckmdb | 0.000 | AfD | Andreas B |
| 16 | andreassteier | 0.000 | CDU/CSU | Andreas S |
| 17 | andrejhunko | 0.400 | Die Linke | Andrej Hu |
| 18 | anettekramme | | SPD | Anette Kr |
| 19 | anjakarliczek | 0.000 | CDU/CSU | Anja Karli |
| 20 | anjaweisgerber | 0.250 | CDU/CSU | Anja Weis |

=VLOOKUP([@Vertex],Table24[#All],2)

4

5
6

Document Actions

Refresh Graph | Harel-Koren Fast Mul | Lay Out Again | Dynamic Filters | Graph Options

Zoom: 100 | Scale: 10 | Autoscale

G1: afd chemnitz afdimbundestag seehofer maaßen merkel afdwikt bundestag wirsindmehr cdu

G3: chemnitz bundestag maaßen afd wirsindmehr merkel spd seehofer verfassungsschutz berlin

G4: chemnitz spd maaßen bundestag afd wirsindmehr seehofer mietenstopp solidarischesland nahles

G6: afd chemnitz bundestag spd merkel afdimbundestag köthen hetzjaden wirsindmehr afdwikt

G8: afd chemnitz seehofer wirsindmehr bundestag gentechnik bundeshaushalt glyphosat europa migration

G9: bundestag organspende chemnitz googlealerts schäuble afd widerspruchslösung investitionsstopp berlin fraktionsklausur18

G10: europawahl europa brexit eu orban idlib chemnitz infrastruktur maaßen...

G11: gillamoos chemnitz smmfair...

G12: bundestag...

4. In the vertices worksheet sort **column A (Vertex)** from A to Z.
5. Go to **column AC** and name it e.g. Party.
6. Fill in the formula into cell AC 3: =VLOOKUP([@Vertex],Table24[#All],2) to link to the Twitter handles in the newly created worksheet.

| | A | B | C | D | E | F | G | AC | |
|-----|-------------------|-------|-------|--------|-------|---|---------------|----------------|--|
| 1 | Visual Properties | | | | | | Other Columns | | |
| 2 | Vertex | Color | Shape | Size | Opaci | Image | Visib | Party | |
| 136 | chriskuehn_mdb | green | | 162.0 | | http://pbs.tw | | B90/Die Grünen | |
| 137 | crueffer | green | | 162.0 | | http://pbs.tw | | B90/Die Grünen | |
| 138 | dr_tiemann | green | | 162.0 | | http://pbs.tw | | B90/Die Grünen | |
| 139 | ekindeligoez | green | | 392.8 | | | | | |
| 140 | ingrid_nestle | green | | 162.0 | | | | | |
| 141 | markuskurthmd | green | | 162.0 | | | | | |
| 142 | markustressel | green | | 162.0 | | | | | |
| 143 | matthiasgastel | green | | 240.2 | | | | | |
| 144 | nouripour | green | | 162.0 | | | | | |
| 145 | erhardgrundl | green | | 162.0 | | | | | |
| 146 | mgrossebroeme | black | | 1000.0 | | | | | |
| 147 | andischeuer | black | | 1000.0 | | | | | |
| 148 | jensspahn | black | | 1000.0 | | | | | |
| 149 | peteraltmaier | black | | 864.9 | | | | | |
| 150 | dorobaer | black | | 769.5 | | http://pbs.tw | | CDU/CSU | |
| 151 | anjakarliczek | black | | 337.8 | | http://pbs.tw | | CDU/CSU | |
| 152 | thomas_bareiss | black | | 403.4 | | http://pbs.tw | | CDU/CSU | |
| 153 | erwin_rueddel | black | | 288.1 | | http://pbs.tw | | CDU/CSU | |

Group Options

Skip groups -- don't show them in the Graph Pane

What colors should be used for the groups' vertices?

The colors specified in the Vertex Color column on the Groups worksheet. (The Color column on the Vertices worksheet is ignored.)

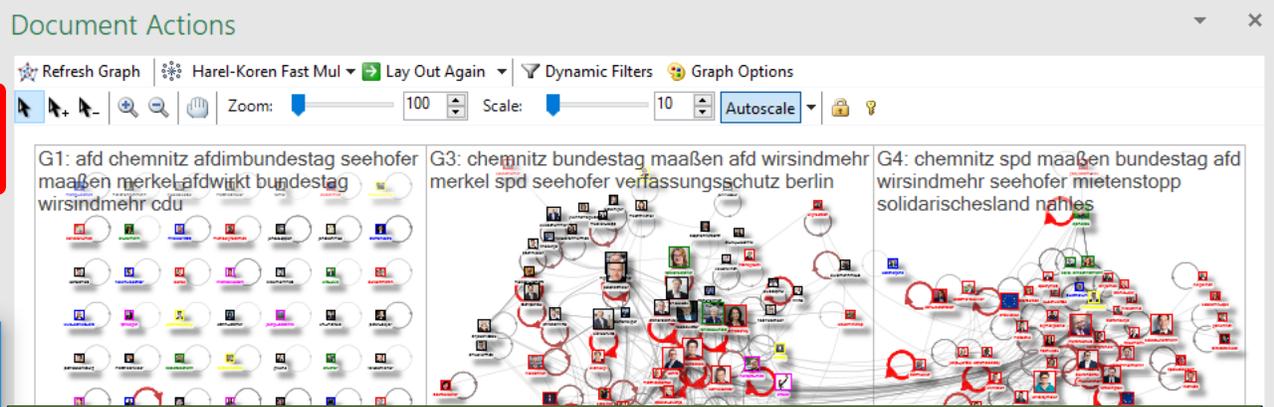
The colors specified in the Color column on the Vertices worksheet. (The Vertex Color column on the Groups worksheet is ignored.)

The shapes specified in the Vertex Shape column on the Groups worksheet. (The Shape column on the Vertices worksheet is ignored.)

The shapes specified in the Shape column on the Vertices worksheet. (The Vertex Shape column on the Groups worksheet is ignored.)

You can also lay out each group in its own box. Go to NodeXL, Graph, Layout, Layout Options.

OK Cancel



7. Sort worksheet by column AC (Party).

8. Copy and paste party colors into each row of column B (Color) in relation to column AC (Party)

9. Open Analysis > Groups > Group options and check the box „Colors specified in the Color column of the Vertices worksheet“.



| | A | B | C | D | E | F | G | AC | |
|-----|----------------|-------------------|-------|-------|-------|---|------------|----------------|---------------|
| 1 | | Visual Properties | | | | | | | Other Columns |
| 2 | Vertex | Color | Shape | Size | Opaci | Image | Visibility | Party | |
| 136 | chriskuehn_mdb | green | | 162.0 | | http://pbs.twimg.com | | B90/Die Grünen | |
| 137 | crueffer | green | | | | | | B90/Die Grünen | |
| 138 | dr_tiemann | green | | | | | | B90/Die Grünen | |
| 139 | ekindeligoez | green | | | | | | B90/Die Grünen | |
| 140 | ingrid_nestle | green | | | | | | B90/Die Grünen | |
| 141 | markuskurthmdb | green | | | | | | B90/Die Grünen | |
| 142 | markustressel | green | | | | | | B90/Die Grünen | |
| 143 | matthiasgastel | green | | | | | | B90/Die Grünen | |
| 144 | nouripour | green | | | | | | B90/Die Grünen | |
| 145 | erhardgrundl | green | | | | | | B90/Die Grünen | |
| 146 | mgrossebroemer | black | | | | | | CDU/CSU | |
| 147 | andischeuer | black | | | | | | CDU/CSU | |
| 148 | jensspahn | black | | | | | | CDU/CSU | |
| 149 | peteraltmaier | black | | | | | | CDU/CSU | |
| 150 | dorobaer | black | | | | | | CDU/CSU | |
| 151 | anjakarliczek | black | | | | | | CDU/CSU | |
| 152 | thomas_bareiss | black | | 403.4 | | http://pbs.twimg.com | | CDU/CSU | |
| 153 | erwin_rueddel | black | | 288.1 | | http://pbs.twimg.com | | CDU/CSU | |

Graph Options

Edges Vertices Other

Color: █

Shape: **Disk**

Size (simple shapes):

Size (images):

Opacity:

Effects:

None

Drop shadow (slow)

Glow (slow) Width: 3.0

Selected vertices

Color: █

When a vertex is clicked, select its incident edges

Reset All OK Cancel

Document Actions

Refresh Graph 11 **Graph Options 10**

G1: afd chemnitz afdimbundestag seehofer maßen merkel afdwirkt bundestag wirsindmehr cdu

G3: chemnitz bundestag maßen afd wirsindmehr merkel spd seehofer verfassungsschutz berlin

G4: chemnitz spd maßen bundestag afd wirsindmehr seehofer mietenstopp solidarischesland nahles

10. Open Graph Options > Vertices and set Shape from Image to Disk.

11. Refresh Graph.

12. Save map to the file.

G6: afd chemnitz bundestag spd merkel afdimbundestag köthe hetzjagden wirsindmehr afdwirkt

G8: afd chemnitz seehofer wirsindmehr bundestag gentechnik bundeshaushalt glyphosat europa migration

G9: bundestag organspende chemnitz googlealerts schäuble afd widerspruchslösung investitionsstopp berlin fraktionsklausur 18

G10: europawahli europa brexit eu orban idlib chemnitz infrastruktur maßen...

G11: gillamoos chemnitz smmfair...

G12: bundestag...

| | A | B | C | D | E | F | G | AC |
|-----|----------------|-------------------|-------|--------|-------|---|------------|----------------|
| 1 | | Visual Properties | | | | | | Other Columns |
| 2 | Vertex | Color | Shape | Size | Opaci | Image | Visibility | Party |
| 136 | chriskuehn_mdb | green | | 162.0 | | http://pbs.twimg.com | | B90/Die Grünen |
| 137 | crueffer | green | | 162.0 | | http://pbs.twimg.com | | B90/Die Grünen |
| 138 | dr_tiemann | green | | 162.0 | | http://pbs.twimg.com | | B90/Die Grünen |
| 139 | ekindeligoez | green | | 392.8 | | http://pbs.twimg.com | | B90/Die Grünen |
| 140 | ingrid_nestle | green | | 162.0 | | http://pbs.twimg.com | | B90/Die Grünen |
| 141 | markuskurthmdb | green | | 162.0 | | http://pbs.twimg.com | | B90/Die Grünen |
| 142 | markustressel | green | | 162.0 | | http://pbs.twimg.com | | B90/Die Grünen |
| 143 | matthiasgastel | green | | 240.2 | | http://pbs.twimg.com | | B90/Die Grünen |
| 144 | nouripour | green | | 162.0 | | http://pbs.twimg.com | | B90/Die Grünen |
| 145 | erhardgrundl | green | | | | http://pbs.twimg.com | | B90/Die Grünen |
| 146 | mgrossebroemer | black | | 1000.0 | | http://pbs.twimg.com | | CDU/CSU |
| 147 | andischeuer | black | | 1000.0 | | http://pbs.twimg.com | | CDU/CSU |
| 148 | jensspahn | black | | 1000.0 | | http://pbs.twimg.com | | CDU/CSU |
| 149 | peteraltmaier | black | | 864.9 | | http://pbs.twimg.com | | CDU/CSU |
| 150 | dorobaer | black | | 769.5 | | http://pbs.twimg.com | | CDU/CSU |
| 151 | anjakarliczek | black | | 337.8 | | http://pbs.twimg.com | | CDU/CSU |
| 152 | thomas_bareiss | black | | 403.4 | | http://pbs.twimg.com | | CDU/CSU |
| 153 | erwin_rueddel | black | | 288.1 | | http://pbs.twimg.com | | CDU/CSU |

Document Actions

Refresh Graph Harel-Koren Fast Mul Lay Out Again Dynamic Filters Graph Options

Zoom: 100 Scale: 15 Autoscale

G1: afd chemnitz afdimbundestag seehofer maaßen merkel afdwirkt bundestag wirsindmehr edu

G3: chemnitz bundestag maaßen afd wirsindmehr merkel spd seehofer verfassungsschutz berlin

G4: chemnitz spd maaßen bundestag afd wirsindmehr seehofer mietenstopp solidarischesland nahles

G5: chemnitz maaßen wirsindmehr seehofer bundestag afd verfassungsschutz hambacherforst hambaleibt pflege

G7: chemnitz wirsindmehr maaßen aufstehen afd verfassungsschutz linke seehofer hambacherforst mietenwahnsinn

G10: europawahl europa brexit eu orban idlib chemnitz infrastruktur maaßen...

G2: bundestag groko maaßen chemnitz fdp seehofer berlin merkel tagderoffenentür brexit

G6: afd chemnitz bundestag spd merkel afdimbundestag köthen hetzjagden wirsindmehr afdwirkt

G8: afd chemnitz seehofer wirsindmehr bundestag gentechnik bundeshaushalt glyphosat europa migration

G9: bundestag organspende chemnitz googlealerts schauble afd widerspruchstösung investitionsstopp berlin fraktionsklausur 18

G11: gilliamos chemnitz smmfair

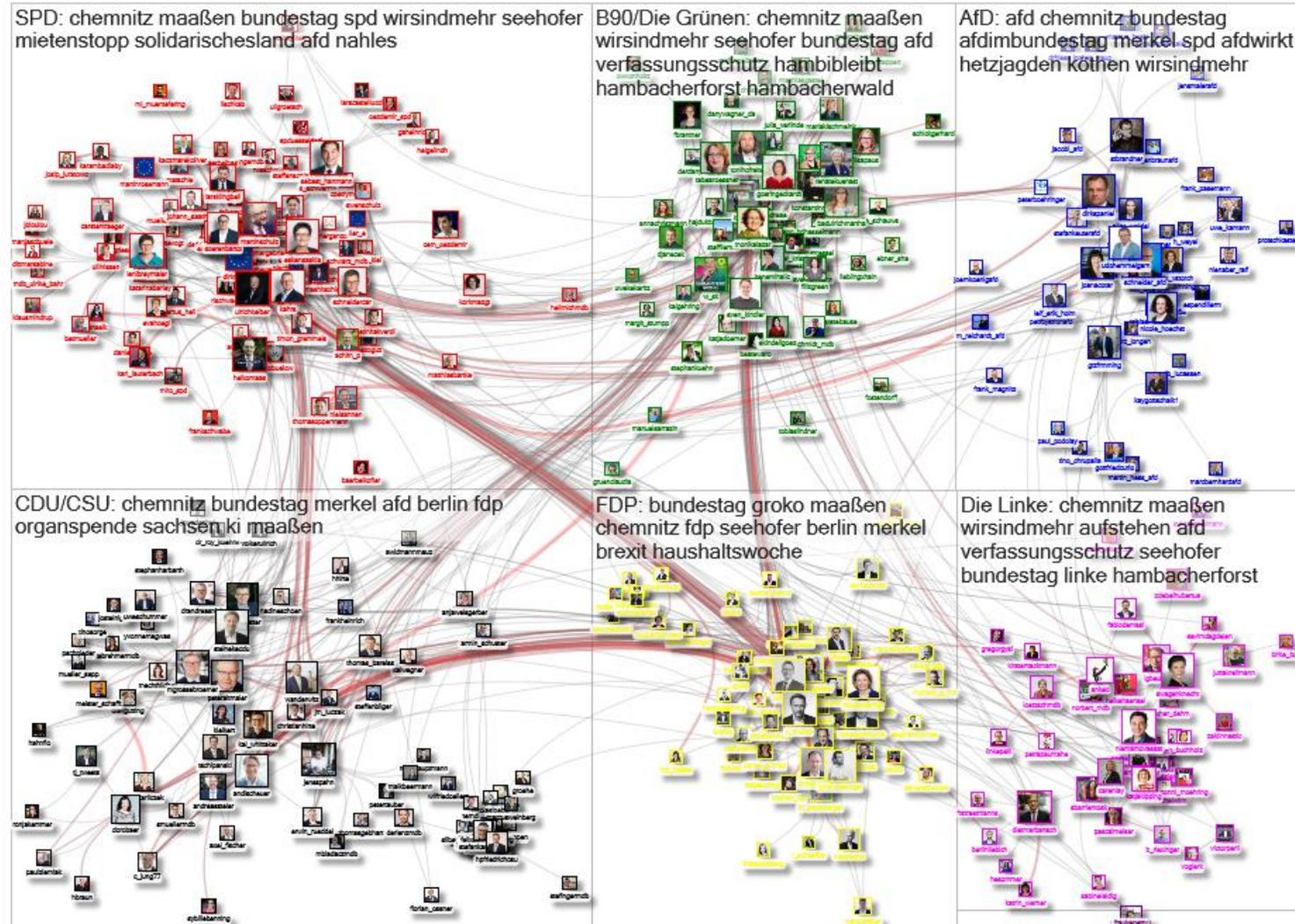
G12: bundestag...

6. PARTY NETWORK MAP

Workflow

Step 1: Group by Party

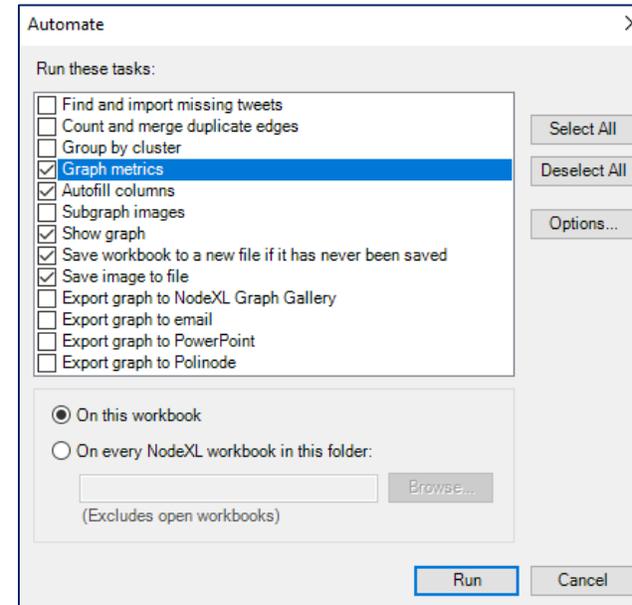
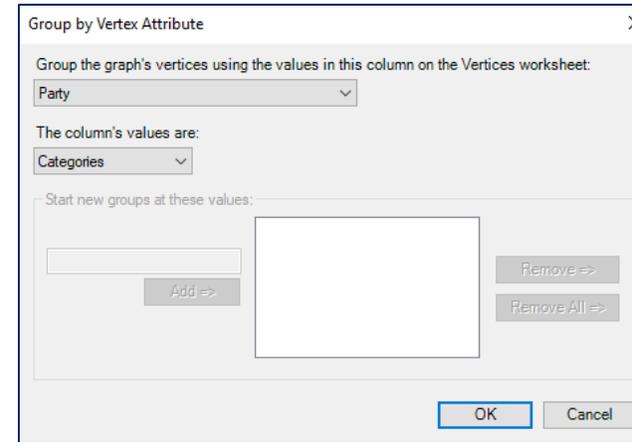
Step 2: Automate



6. PARTY NETWORK MAP

1. Save the previous dataset to a new file.
2. Select **Analysis > Groups > Group by Vertex attribute**
3. Set the first column to **Party** and click OK (see on the right).

4. Import the previously used automation file and then open the **Automate** window.
5. **(!) Do not Group by cluster** (see on the right).
6. Click Run and wait.

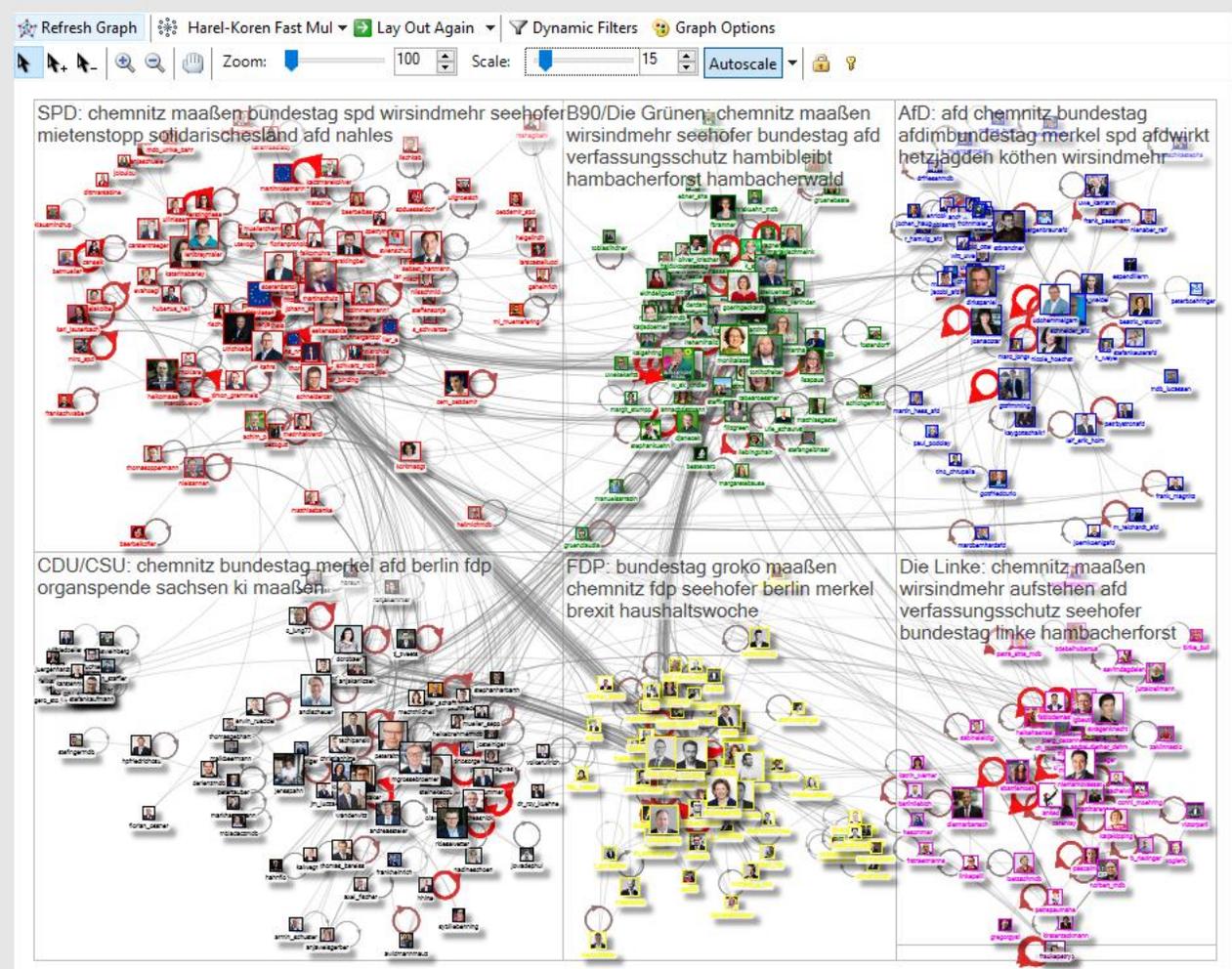


B2 Vertex Color

| | A | B | C | D | E | K |
|----|----------------|-------------------|--------------|------------|------------|---------|
| 1 | | Visual Properties | | | | Graph I |
| 2 | Group | Vertex Color | Vertex Shape | Visibility | Collapsed? | Vertice |
| 4 | CDU/CSU | black | Disk | | | |
| 5 | B90/Die Grünen | green | Disk | | | |
| 6 | AfD | blue | Disk | | | |
| 7 | FDP | yellow | Disk | | | |
| 8 | Die Linke | magenta | Disk | | | |
| 9 | fraktionslos | purple | Disk | | | |
| 10 | | | | | | |
| 11 | | | | | | |
| 12 | | | | | | |
| 13 | | | | | | |
| 14 | | | | | | |
| 15 | | | | | | |
| 16 | | | | | | |
| 17 | | | | | | |
| 18 | | | | | | |
| 19 | | | | | | |
| 20 | | | | | | |
| 21 | | | | | | |
| 22 | | | | | | |
| 23 | | | | | | |
| 24 | | | | | | |

1. Assign party colors to the groups in column B (Vertex Color).
2. Refresh the Graph.
3. Save the map to your file.

Document Actions



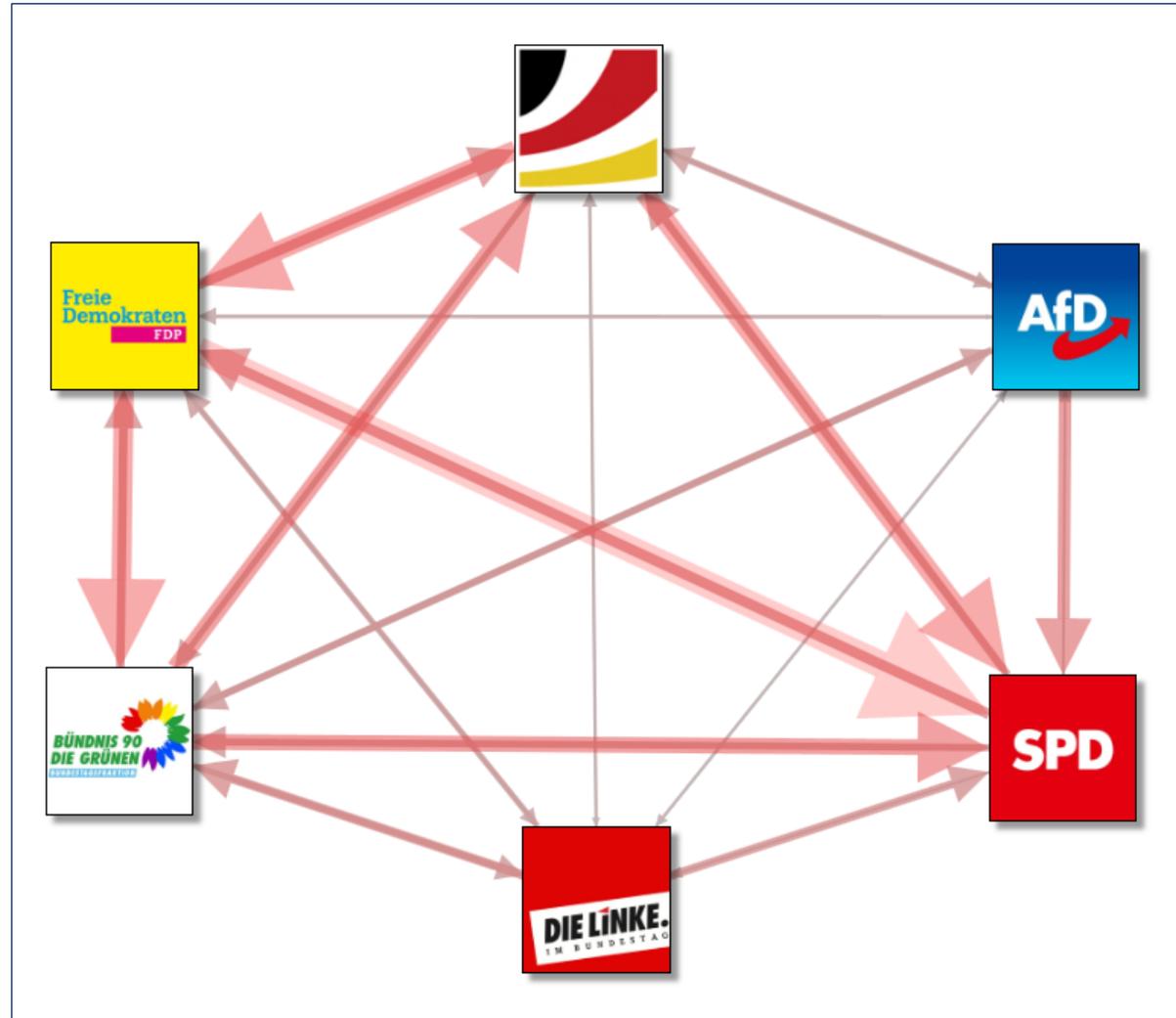
7. PARTY INTERACTION MAP

Workflow

Step 1: Create new network

Step 2: Add images

Step 3: Customize map



7. PARTY INTERACTION MAP – CREATE NEW NETWORK

1. Open a new NodeXL Pro workbook and save it to your machine.
2. Go to the **Group Edges** worksheet of the previous dataset.
3. Copy and paste columns **Group 1 (A)** and **Group 2 (B)** into columns **Vertex 1 (A)** and **Vertex 2 (B)** of the **Edges** worksheet of the new workbook.
4. Also copy and paste the **Edges** column (**C**) into **column N** of the new workbook. This column will be used as edge weight.
5. Go to **Data > Prepare Data > Get Vertices from Edges worksheet**
6. Show Graph.

| | A | B | C |
|----|----------------|----------------|---------------|
| 1 | | | Graph Metrics |
| 2 | Group 1 | Group 2 | Edges |
| 3 | SPD | SPD | 2192 |
| 4 | SPD | CDU/CSU | 33 |
| 5 | SPD | B90/Die Grünen | 11 |
| 6 | SPD | AfD | 2 |
| 7 | SPD | FDP | 32 |
| 8 | SPD | Die Linke | 4 |
| 9 | CDU/CSU | SPD | 25 |
| 10 | CDU/CSU | CDU/CSU | 1410 |
| 11 | CDU/CSU | B90/Die Grünen | 12 |
| 12 | CDU/CSU | AfD | 5 |
| 13 | CDU/CSU | FDP | 21 |
| 14 | CDU/CSU | Die Linke | 2 |
| 15 | B90/Die Grünen | SPD | 34 |
| 16 | B90/Die Grünen | CDU/CSU | 42 |
| 17 | B90/Die Grünen | B90/Die Grünen | 1842 |
| 18 | B90/Die Grünen | AfD | 1 |
| 19 | B90/Die Grünen | FDP | 14 |

| | A | B | N |
|----|----------------|----------------|---------------|
| 1 | | | Other Columns |
| 2 | Vertex 1 | Vertex 2 | Edges |
| 3 | SPD | SPD | 2192 |
| 4 | SPD | CDU/CSU | 33 |
| 5 | SPD | B90/Die Grünen | 11 |
| 6 | SPD | AfD | 2 |
| 7 | SPD | FDP | 32 |
| 8 | SPD | Die Linke | 4 |
| 9 | CDU/CSU | SPD | 25 |
| 10 | CDU/CSU | CDU/CSU | 1410 |
| 11 | CDU/CSU | B90/Die Grünen | 12 |
| 12 | CDU/CSU | AfD | 5 |
| 13 | CDU/CSU | FDP | 21 |
| 14 | CDU/CSU | Die Linke | 2 |
| 15 | B90/Die Grünen | SPD | 34 |
| 16 | B90/Die Grünen | CDU/CSU | 42 |
| 17 | B90/Die Grünen | B90/Die Grünen | 1842 |
| 18 | B90/Die Grünen | AfD | 1 |
| 19 | B90/Die Grünen | FDP | 14 |
| 20 | B90/Die Grünen | Die Linke | 9 |
| 21 | AfD | SPD | 27 |

7. PARTY INTERACTION MAP - CUSTOMIZE

1. To add images to the map, go to the Twitter page of each party and copy the URL of the Twitter profile image to **column F (Image File)** in the **Vertices** spreadsheet.
2. Set the **Graph Layout** to **Circle**.
3. Open **Autofill** columns to set **Edge Color**, **Edge Width** and **Edge Opacity** to **Edges**.
4. Save the map to your file.

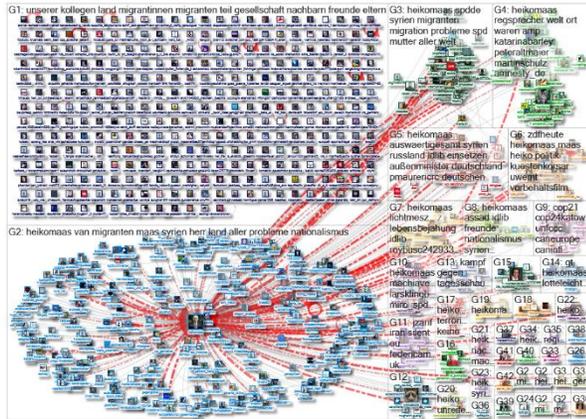
The screenshot displays the NodeXL Pro interface with a party interaction map. The map shows nodes for various German political parties: AfD (blue), Freie Demokraten (yellow), DIE LINKE (red), SPD (red), Bündnis 90 Die Grünen (rainbow), and a black and white/red logo. Red arrows indicate interactions between these parties.

The spreadsheet in the background lists the data used for the map:

| Vertex | Image File | Visibility | Color |
|--------|----------------|---|-------|
| 1 | | | |
| 2 | | | |
| 3 | AfD | https://pbs.twimg.com/profile_image | |
| 4 | B90/Die Grünen | https://pbs.twimg.com/profile_image | |
| 5 | CDU/CSU | https://pbs.twimg.com/profile_image | |
| 6 | Die Linke | https://pbs.twimg.com/profile_image | |
| 7 | FDP | https://pbs.twimg.com/profile_image | |
| 8 | fraktionslos | https://pbs.twimg.com/profile_image | |
| 9 | SPD | https://pbs.twimg.com/profile_image | |
| 10 | | | |
| 11 | | | |
| 12 | | | |
| 13 | | | |
| 14 | | | |
| 15 | | | |
| 16 | | | |
| 17 | | | |
| 18 | | | |
| 19 | | | |
| 20 | | | |
| 21 | | | |
| 22 | | | |

Overlaid on the spreadsheet are two dialog boxes. The 'Autofill Columns' dialog is set to 'Edges' for 'Edge Color', 'Edge Width', 'Edge Style', 'Edge Opacity', and 'Edge Visibility'. The 'Edge Opacity Options' dialog is open, showing 'Map this source column number' set to 'The smallest number in the column' with a value of 0, and 'To this edge opacity' set to 80.0. The 'Map this source column number' is also set to 'The largest number in the column' with a value of 0, and 'To this edge opacity' is set to 30.0. There are also options for 'Ignore outliers' and 'Use a logarithmic mapping'.

8. MORE NETWORK ANALYSES



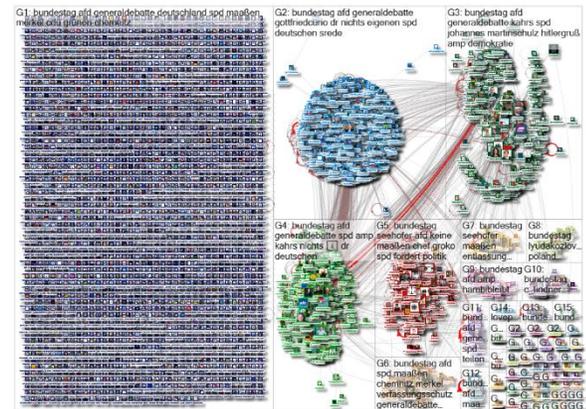
There are many further ways to explore political networks with NodeXL Pro:

NodeXL Pro Twitter Users Network Importer

- Create single datasets for each party to explore inner-party networks. Increase the number of tweets to be collected and expand the time frame.

NodeXL Pro Twitter Search Network Importer

- Make use of the NodeXL Pro Twitter Search Network Importer to analyze current discussions involving the politicians Twitter handles or names. Query example: [@HeikoMaas OR "Heiko Maas"](#)
- Explore current discussions around hashtags e.g. [#Bundestag](#) or [#Generaldebatte](#)



Facebook Fan Pages Importer

- Almost all politicians have a Facebook Fan Page. Create a seed list with Facebook Fan Page IDs and use the NodeXL Pro Facebook Fan Pages Importer to explore page-to-page networks based on Fan Page Likes.



If you have any questions or suggestions regarding this tutorial,
please send an email to:

info@smrfoundation.org