UNIT – V
Case Study – III
Youtube, Wiki Networks

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Content

- **Youtube**
  - Contrasting patterns of content interaction, and Prominence
- **Wiki Networks**
  - Connections of creating and collaboration

Youtube

- Created in 2005, YouTube is an arena for personal communication, a place to create online communities or egocentric social networks, and a platform that can be used for distributing commercial content.
- YouTube was one of the first online services to offer users the opportunity to upload videos and share them with the world.
- YouTube's structure is based on two sub-layers, clearly differentiating between videos (content) and users (community) while maintaining a close linkage between the two.

Youtube

- Similarly, network analysis can be performed on both networks of video or users, either independently of each other or in conjunction.
- YouTube features are constantly changing, with new tools being introduced and others periodically removed, often directed at making YouTube an even more social space.
- **Videos:**
- YouTube videos are displayed on separate pages with consistent layouts.
- YouTube pages also include controls for video playback features, a Subscribe button, a Share button, and the ability to Report inappropriate videos.

Youtube

- Video metadata:
- Title: a title chosen by the user who uploads the video.
- Description: a detailed description provided by the user when first uploading the video.
- Username: the poster's username and icon, which links to their channel.
- Tags: chosen by the user to describe the video so searchers can more easily find it.
- Category: chosen by the user from a closed-list of categories provided by YouTube.

Youtube

- Video metadata:
- Views, data, and statistics: YouTube provides the number of views the video generated, as well as the number of likes and dislikes, and the date of publication.
- Comments: comments about the video by users.
- Comments can be threaded, pinned to the top, and liked/disliked by other users.

Youtube

- **The User Channel**
- Similar to other social networks, YouTube users can create personal profiles called "channels," which are customizable.
- Users can choose what information to share with other viewers and which sections to display on their channel.
- Users have the option to display two different social networks via the Channels section of the page:

Youtube

- ***Featured Channels:*** These are other YouTube channels that the current channel wants to highlight. They are often related channels or ones that the current user values highly. They create a directed (asymmetrical) edge that points from the current user's channel to each featured channel that is listed. YouTube limits this to 100 featured channels, and many YouTubers only include a handful of them.
- ***Subscriptions:*** These are other YouTube channels that the current channel is subscribed to. Only those that are listed as public will be listed on the Subscriptions section of the Channels page. Like Featured Channels, these are directed links that point from the current user's channel to each user's channel that they are subscribed to.

Networks in Youtube

- YouTube's rich collection of users, videos, comments, subscriptions, featured channels, tags, ratings, and favorite videos offers multiple ways networks can be formed.
- Broadly, video networks are different from user networks in both content and structure.
- Within these networks are several subnetworks that provide insights into the important people, videos, and events in these video-sharing networks. Interesting connections between people and content can be found.

Networks in Youtube

- **Video Networks:**
- Several networks can be constructed that connect videos to other videos using the attributes found on *video* pages:
- *Videos that share the same descriptors:* When users upload videos to YouTube, they must provide video content descriptions, including a title and tags or related keywords.
- Videos can also be classified according to predefined categories, such as *comedy*, *music*, *education*, *politics and news*, *people and blogs*, *how-to and style*, and so on.

Networks in Youtube

- **Video Networks:**
- *Shared comment networks*. Users leave textual comments about videos they have watched, often producing lively discussions. Videos can be connected to one another when the same person (or people) comment on them.
- *Related videos*. A list of related videos is adjacent to each selected video. These lists are based on YouTube algorithms. The current version of NodeXL does not have a way to capture these networks.

Networks in Youtube

- **Users network:**
- In contrast to video networks, which focus on content, user networks focus on connections between users.
- User networks can be explicit or implicit. The direct request or action of at least one user creates explicit networks.
- Users take the effort to click to create "subscription" networks and display those connections on their channel.
- Users choose to add another user's channel to their Featured Channel list. Implicit networks are created when two or more users interact through comments, ratings, and favoriting on user and video profile pages.

Networks in Youtube

- **Users network:**
- Of the three, only comments are visible to external users of YouTube in personally identifiable form; ratings and favoring are anonymized and summed to a single value.
- When one user comments on another's channel profile, an implied connection is created between them.

Youtube Network Analysis

- **Video networks**
- *Centrality:*
- Which videos are central within a category/type of videos?
- Which videos generate many comments, response videos, and higher ratings?
- These videos and users may influence the content produced in other video and attract many relationships (i.e., subscriptions) with people who share an interest in that content. Some videos are central to a specific category, whereas others are peripheral.

Youtube Network Analysis

- **Video networks**
- *Centrality:*
- Are there differences between a single video and a series of videos produced by the same user?
- Do series increase the overall popularity of individual videos?
- Can a single video be as pivotal as a series of videos?
- *Groups:*
- Does the network contain hubs of densely interconnected videos that share properties like common tags and descriptors?

Youtube Network Analysis

- **Video networks**
- *Groups:*
- Which videos are central to those hubs?
- Is their centrality correlated to other attributes?
- Are different hubs connected to each other?
- Which are the boundary videos that connect such hubs? How dense are these hubs?
- How do they compare with other types of social content?

Youtube Network Analysis

- **Video networks**
- *Temporal comparisons*.
- How does a video network evolve over time?
- What affects its development?
- Are certain descriptors, tags, topics, and types of videos crucial to the evolution of the network?
- What is the effect of rapidly and widely exchanged viral videos on the development of the video and user network?
- Do these videos disrupt or reinforce existing networks, or is the effect of viral videos visible mostly outside YouTube's boundaries?
- What changes occur when a video becomes popular?

Youtube Network Analysis

- **User networks**
- *Centrality*.
- Which users are central in the network of connected YouTube users?
- Some users may be central in a specific category but not in others.
- Is centrality an outcome of the explicit or implicit networks?
- Which users are boundary spanners between different parts of the networks?
- Which are peripheral? Can you identify rising YouTube stars?

Youtube Network Analysis

- **User networks**
- *Groups*.
- How do users link together to form emergent groups?
- What brings them together? (e.g., is it a certain
- interest, topic, or another reason?)
- How do the populations of subscribers and featured channels overlap?
- Implicit groups can be found and compared with explicit groups. Are there central and peripheral groups?
- Do subscribers-of-subscribers belong to the same groups? How dense are these groups?

Youtube Network Analysis

- **User networks**
- *Temporal and structural comparisons*.
- How and why does the popularity of users change?
- How do users move from being peripheral to central and vice versa?
- Are boundary spanners changing over time?
- How do external circumstances affect users, their popularity, and their networks?
- How do the video, subscription, and friendship networks align?
- What are the differences between a user's subscription and friendship network? Which is denser?

Youtube Network Analysis

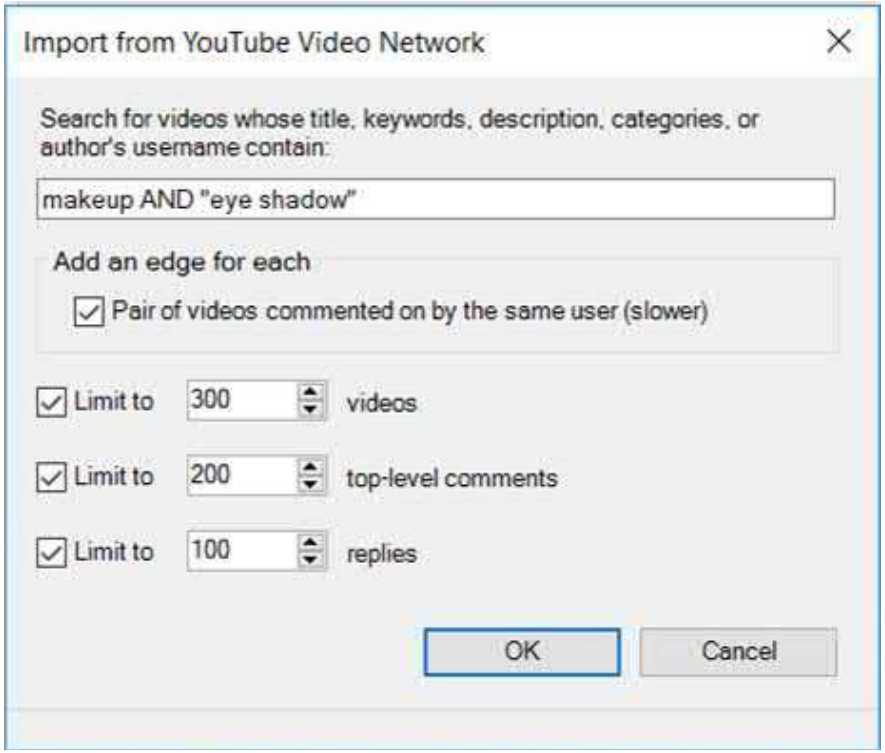
- **User networks**
- *Temporal and structural comparisons.*
- Which is larger?
- How does a change in a video popularity affect these networks?
- Are there differences between the explicit networks and the implicit ones?
- How do they affect each other?

Youtube Network Analysis

- **Importing Youtube data into NodeXL**
- To import data from YouTube into NodeXL, first select which network you are interested in and what type of data to import using one of the data Import options in the NodeXL Data menu.
- Importing video data:
- From the NodeXL ribbon, choose Import then From YouTube's Video Network.

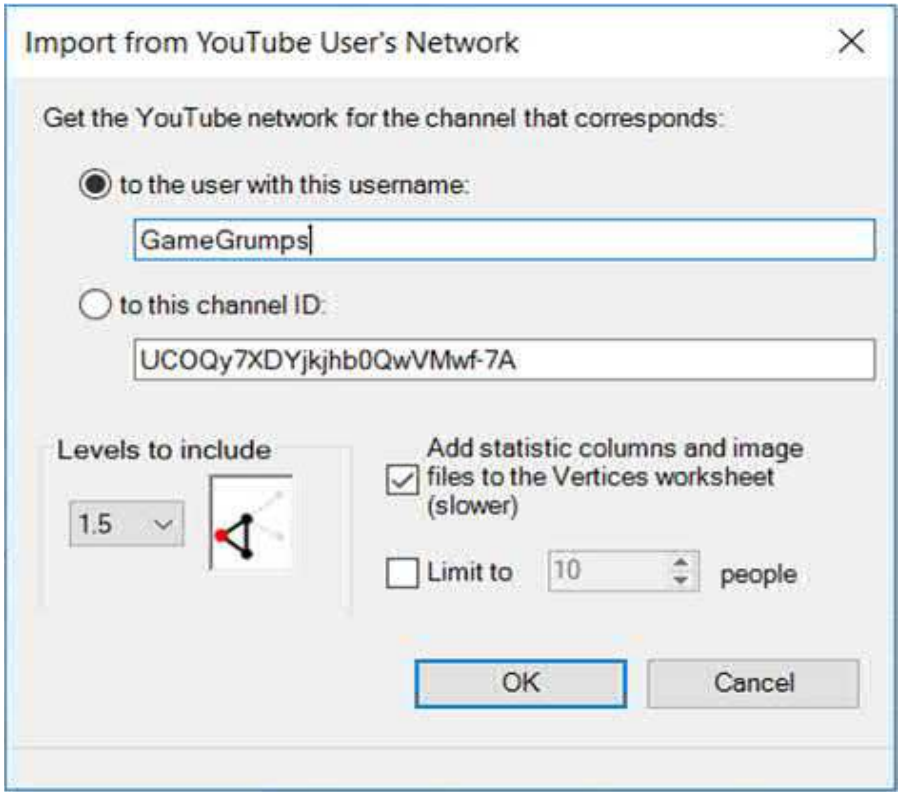
Youtube Network Analysis

- **Importing Youtube data into NodeXL**
- Importing video data:



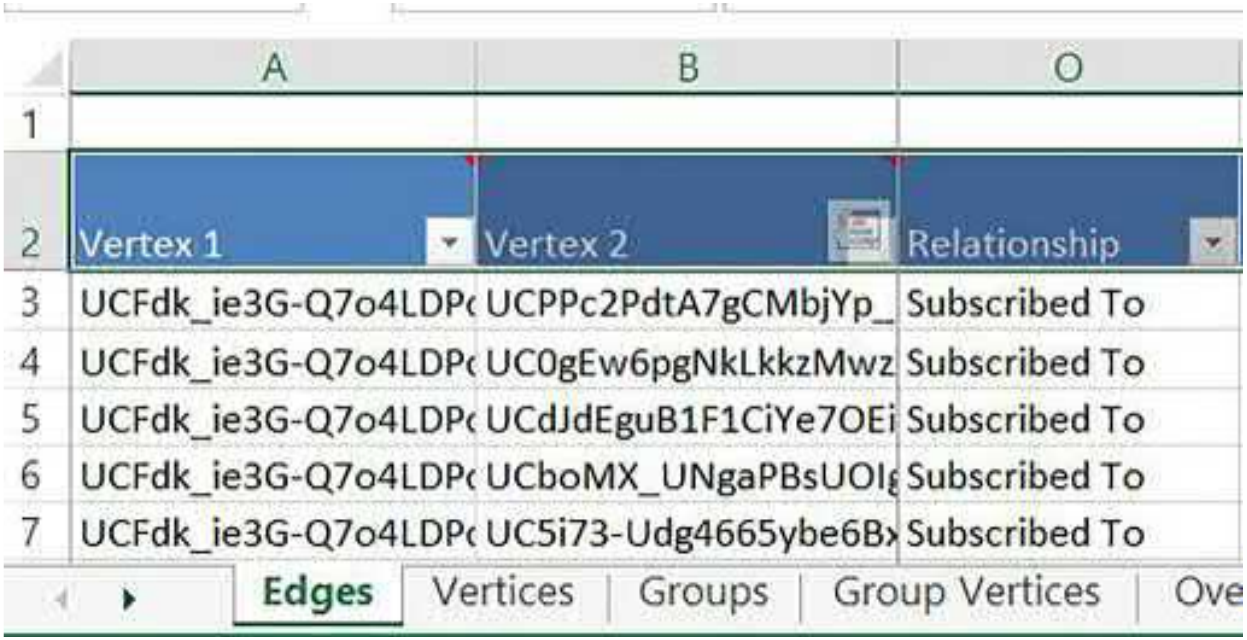
Youtube Network Analysis

- **Importing Youtube data into NodeXL**
- Importing user data:
- From the NodeXL ribbon, choose Import then From YouTube User's Network.



Youtube Network Analysis

- User network

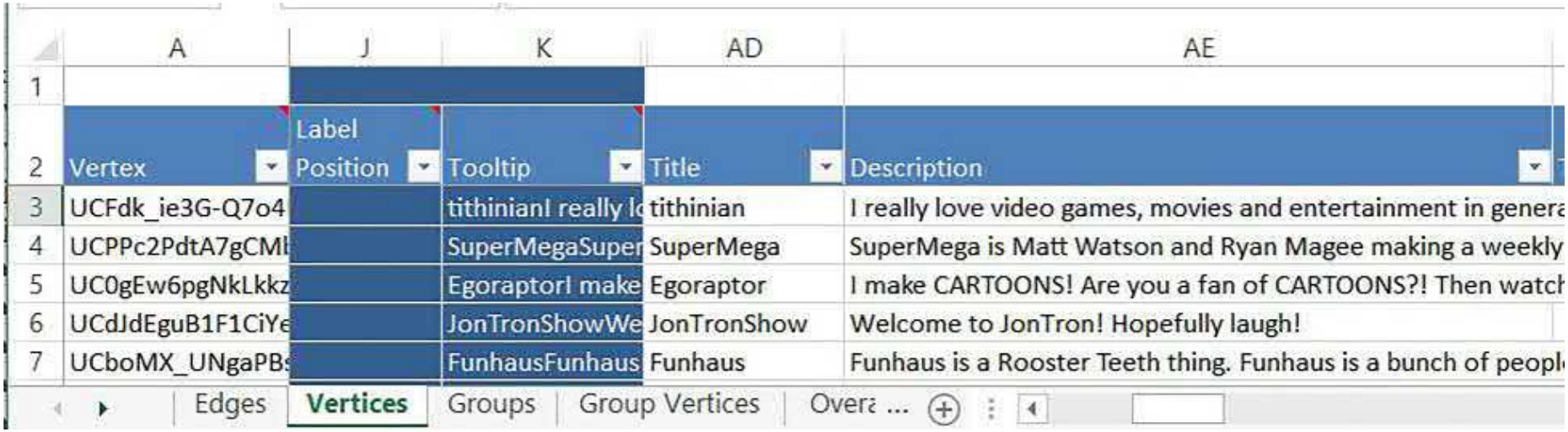


	A	B	O
1			
2	Vertex 1	Vertex 2	Relationship
3	UCFdk_ie3G-Q7o4LDP(	UCPPc2PdtA7gCMbjYp_	Subscribed To
4	UCFdk_ie3G-Q7o4LDP(	UC0gEw6pgNkLkkzMwz	Subscribed To
5	UCFdk_ie3G-Q7o4LDP(	UCdJdEguB1F1CiYe7OEi	Subscribed To
6	UCFdk_ie3G-Q7o4LDP(	UCboMX_UNgaPBsUOIg	Subscribed To
7	UCFdk_ie3G-Q7o4LDP(	UC5i73-Udg4665ybe6B>	Subscribed To

Edges | Vertices | Groups | Group Vertices | Ove

Youtube Network Analysis

- User network

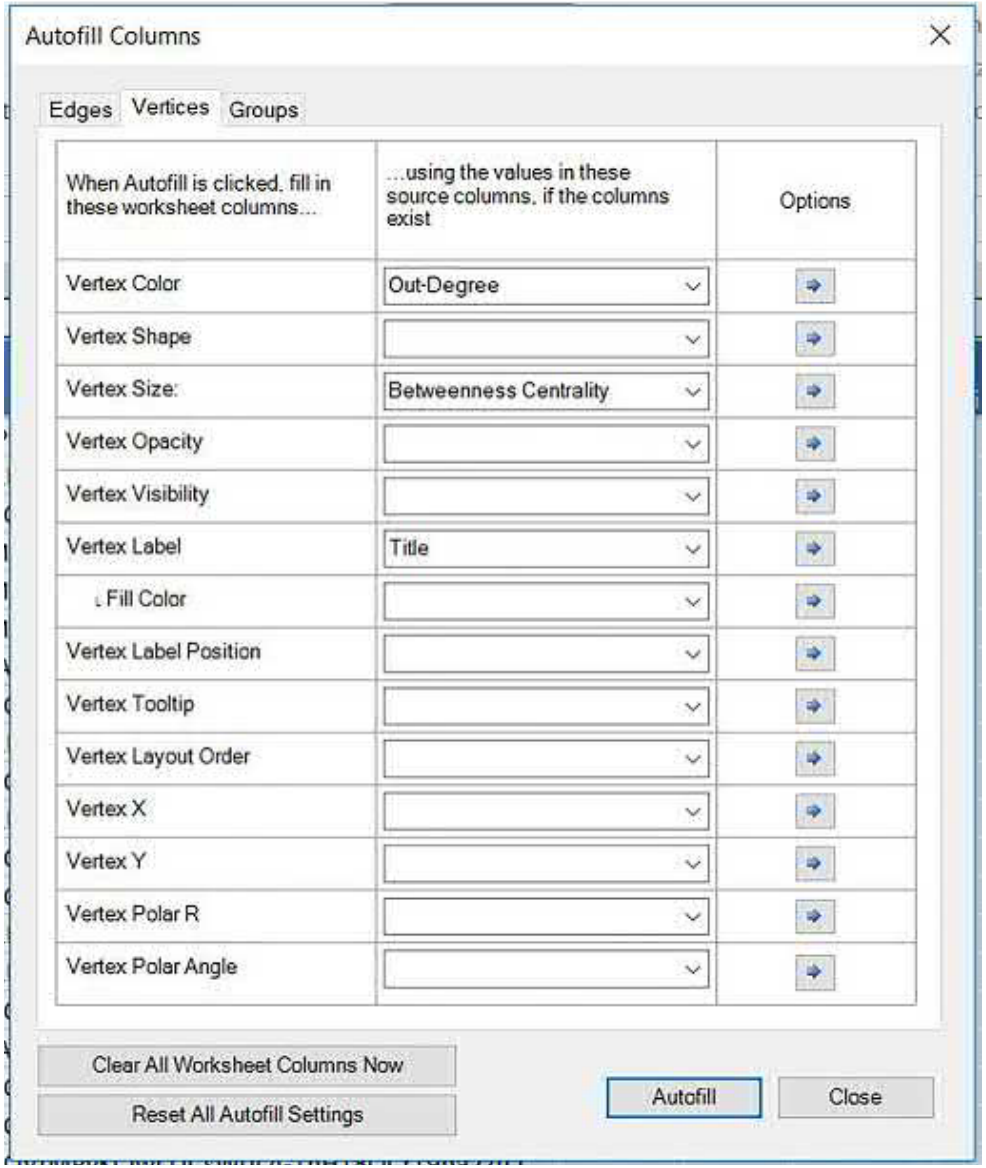


	A	J	K	AD	AE
1					
2	Vertex	Label Position	Tooltip	Title	Description
3	UCFdk_ie3G-Q7o4		tithinianI really l	tithinian	I really love video games, movies and entertainment in genera
4	UCPPc2PdtA7gCMI		SuperMegaSuper	SuperMega	SuperMega is Matt Watson and Ryan Magee making a weekly
5	UC0gEw6pgNkLkkz		EgoraptorI make	Egoraptor	I make CARTOONS! Are you a fan of CARTOONS?! Then watch
6	UCdJdEguB1F1CiYe		JonTronShowWe	JonTronShow	Welcome to JonTron! Hopefully laugh!
7	UCboMX_UNgaPBs		FunhausFunhaus	Funhaus	Funhaus is a Rooster Teeth thing. Funhaus is a bunch of peopl

Edges | Vertices | Groups | Group Vertices | Overa ...

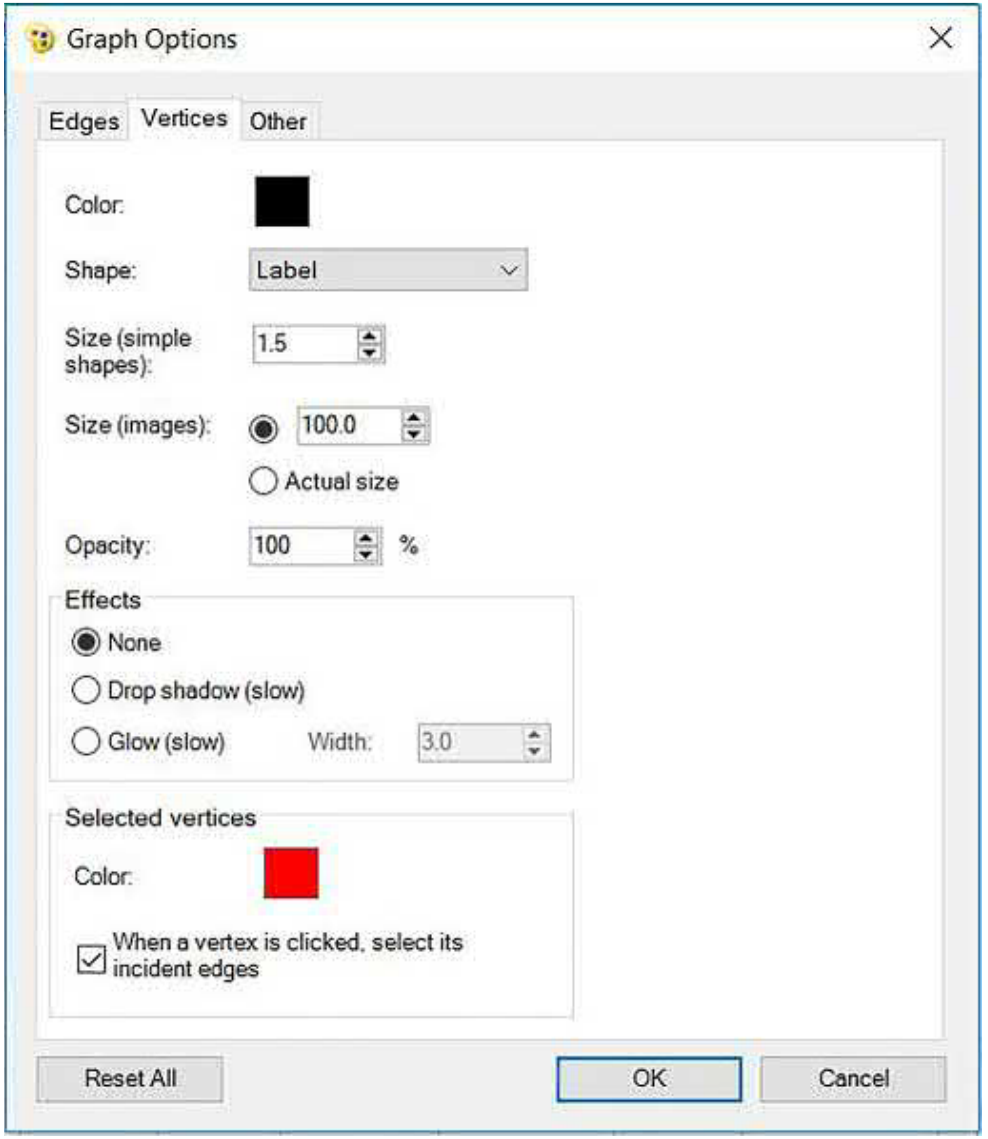
Youtube Network Analysis

- Video network

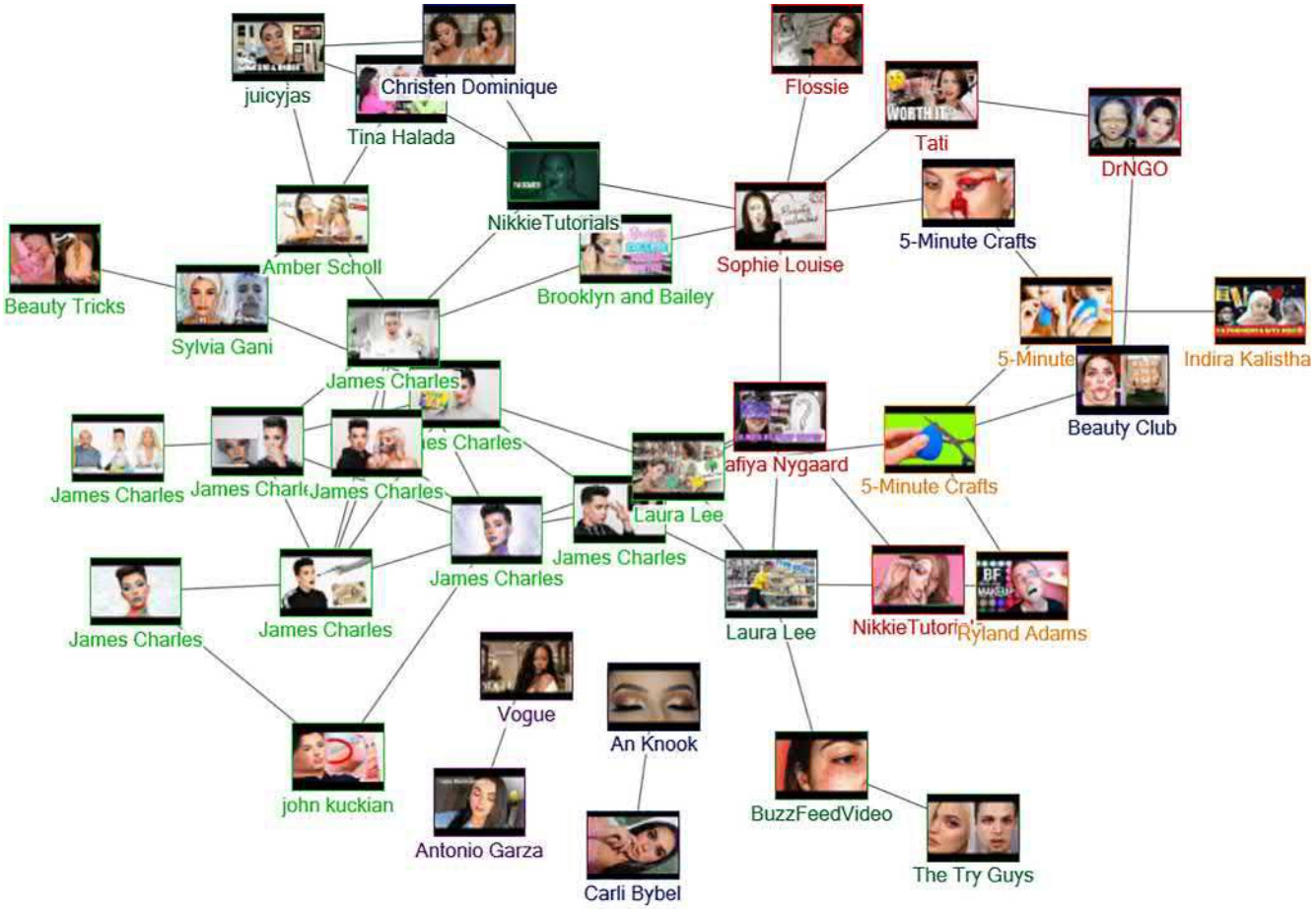


Youtube Network Analysis

- Video network



Youtube Network Analysis



Created with NodeXL Pro (http://nodexl.codeplex.com) from the Social Media Research Foundation (http://www.smrfoundation.org)

Wiki Networks

- A wiki is a website anyone can edit, where every page modification is recorded and archived.
- The first wiki system, the WikiWikiWeb, was invented by Ward Cunningham in 1995 to allow a group to easily and quickly ("wiki" means "quick" in Hawaiian) edit a set of web pages without having to know HTML or deal with moving files back and forth to a web server.
- Wikipedia has become the dominant source for encyclopedic information online, and it is increasingly understood as a social force that challenges traditional notions of authority, expertise, and knowledge construction

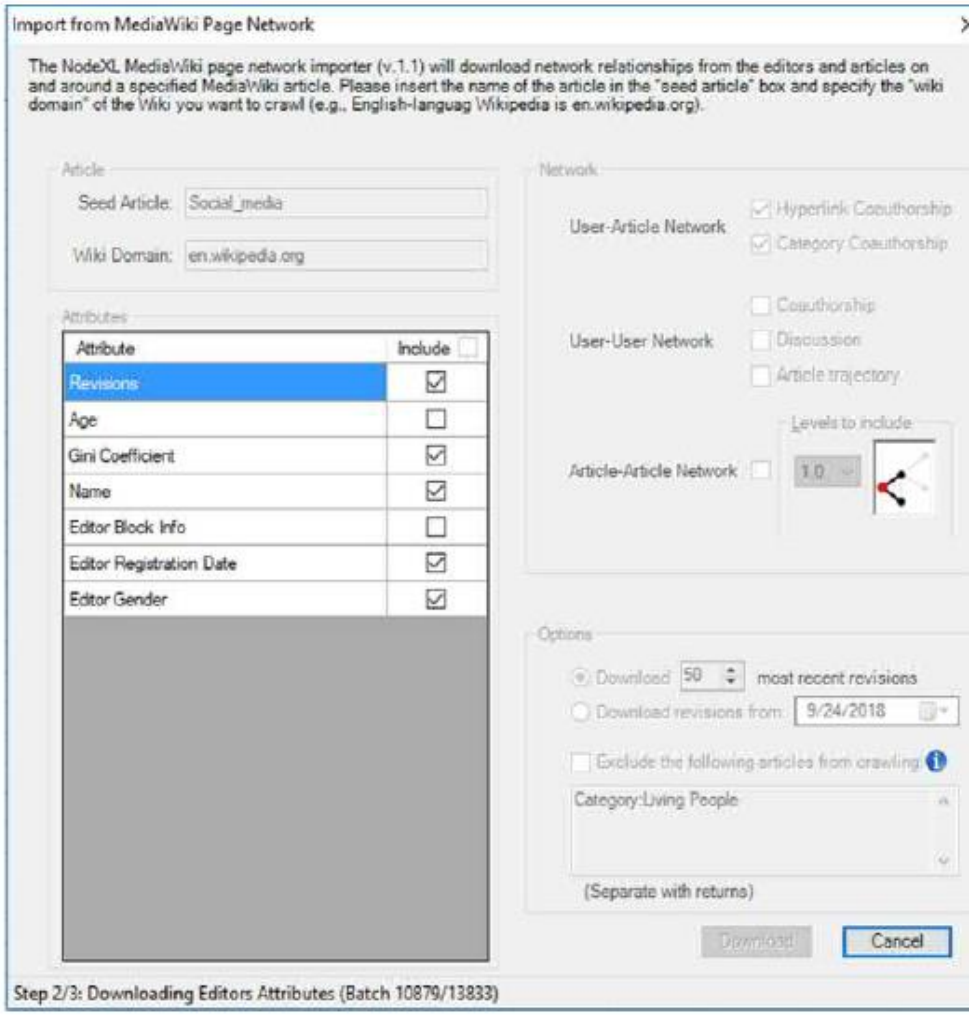
Wiki Networks

- Wikis are built on the premise that *everything is a page*: the content itself, discussion of the content, individual contributors, supporting tools like category pages, and even the policies of the community itself are all contributed by users and evolve over time.
- Wikis also have *user accounts*, which track activity by each person, allow self-disclosure, and facilitate direct communication between people. This discussion will be based primarily on Wikipedia and the MediaWiki software that implements it; however, many wiki sites use the MediaWiki software, and the everything-is-a-page structure and namespaces that characterize Wikipedia are common to most wikis.

Wiki Networks Analysis

- One key feature of NodeXL is its ability to download network data directly from wikis that use the MediaWiki software, including Wikipedia.
- Based on API tools available through MediaWiki, NodeXL Pro provides options to download relationships between networks and editors centered on a specific page within any MediaWiki domain.
- To access the MediaWiki importer, select the Import tab and scroll to From MediaWiki Page Network.

Wiki Networks Analysis



Wiki Networks Analysis

- There are a variety of networks that may be constructed via links and edits within Wikipedia namespaces, and NodeXL integrates an importer for collecting a range of networks from MediWikis
- Some of these networks leverage users as vertices, some leverage pages as vertices, and some display links between both. Edges may represent replies, edits or hyperlinks.

Wiki Networks Analysis

- Selections for network imports include:
- *User-User Network: Coauthorship* This option downloads a specified number of revisions for a seed article (default is 50), finds all users who contributed these edits, identifies which pages the authors have edited, and generates an edge between users if they have edited the same page.
- *User-User Network: Discussion* This option downloads a specified number of revisions for the talk page associated with the seed article, and generates an edge between users if their comments are sequential.

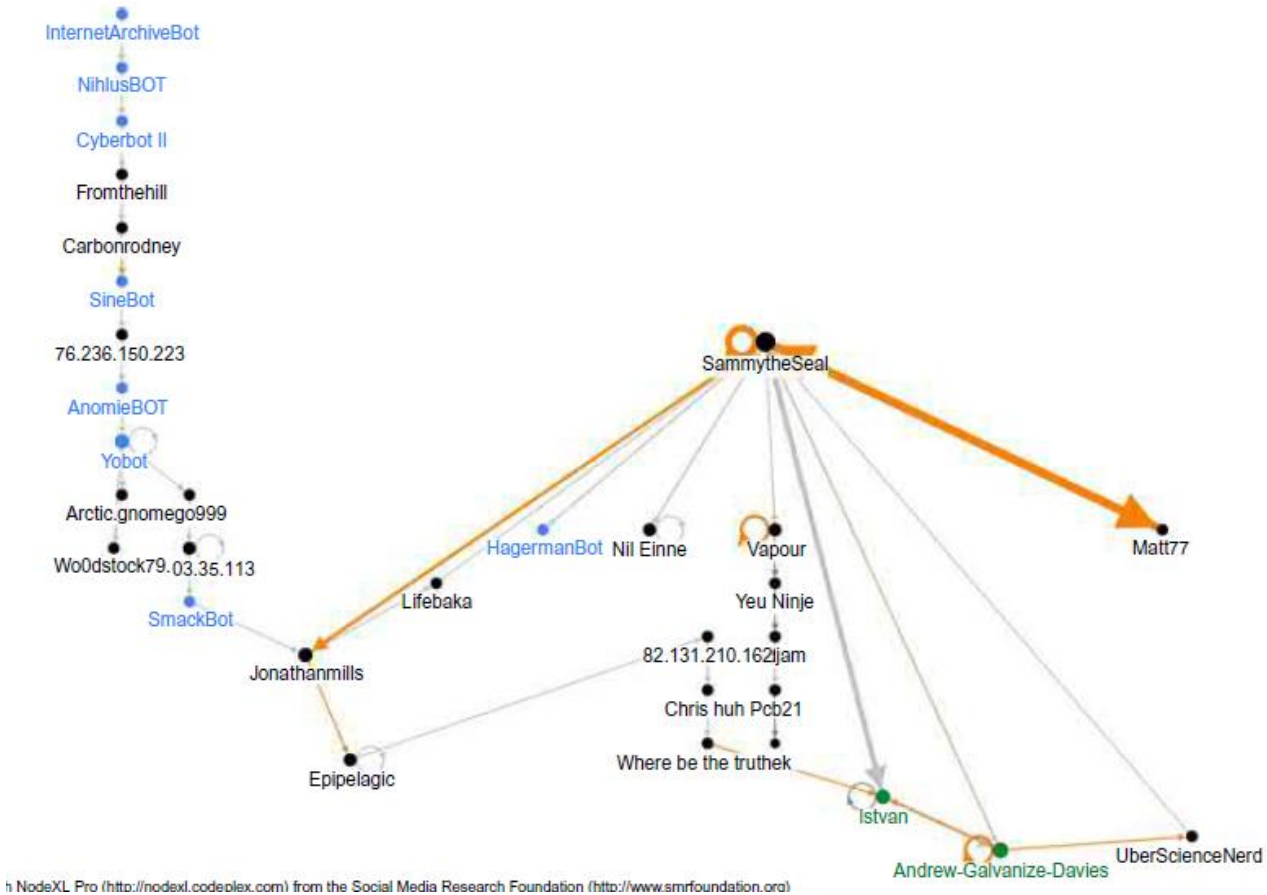
Wiki Networks Analysis

- Selections for network imports include:
- *User-User Network: Article trajectory* This option downloads a specified number of revisions for the seed article and generates an edge between users if they generate edits consecutively.
- *User-Article Network: Hyperlink Coauthorship* This tool selects articles to which the seed article links and downloads a specified number of revisions for all of these articles (default is 50). For each revision, it establishes an edge between the user who generated the revision and the article in which the revision appears.

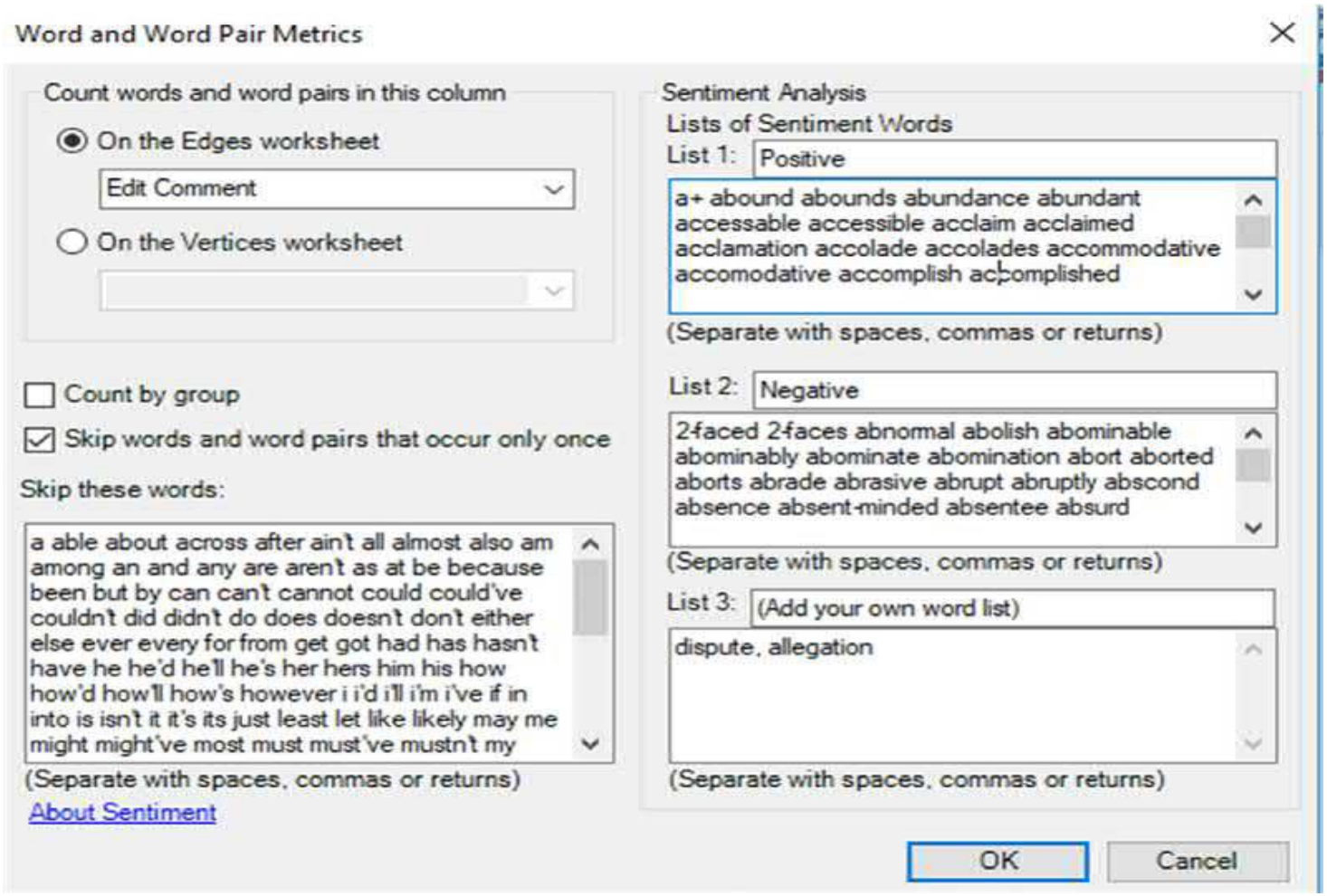
Wiki Networks Analysis

- Selections for network imports include:
- *User-Article Network: Category Coauthorship* Similar to user-article networks for hyperlink coauthorship, this tool downloads articles that are in the same category as the seed article, collects a designated number of revisions, and generates an edge between the user who generated the revision and the article in which the revision appears.
- *Article-Article Network* This selection generates networks of articles and hyperlinks between them. It may capture hyperlinked pages that are 1.5 to two degrees separated from the seed article, and generates edges between them.

Wiki Networks Analysis



Wiki Networks Analysis



Wiki Networks Analysis