3.1
THE MORE YOU KNOW ABOUT **THE ACTORS INTERACTING IN YOUR NETWORKS**, THE EASIER IT WILL BE FOR YOU TO SCALE AND INCREASE YOUR IMPACT.

Networks matter today because electronic and software based communication tools make networks measurable. From online networks analysis, you can get qualitative information by understanding actors and their relations, as well as do quantitative analysis by computing its connection structure. By doing so, you can learn more about the organization, the individuals, the association that can benefit from it or prevent your project from having an impact. If you want to understand with a creative and critical approach how a network works, you need for example to map its relationships in a diagram whose nodes and links form a network, which is by its very nature the fabric of most complex systems. This resource offers an introduction to the fundamental concepts of network mapping through the use of online digital tools in four different steps: understanding the field; detecting the actors and relationships; compiling data and making the map; analysing Network Maps.

Type:

#digital tool

Subject:

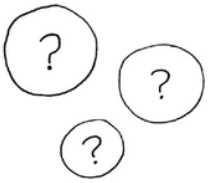
#network mapping

Keywords:

#network analysis #network visualisation #social media mapping

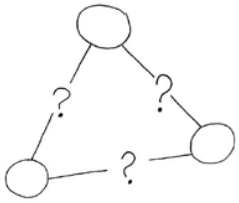
STEP 1.
Understanding the field

Who are the dominant actors in your field?



The actors can vary from real persons to concepts, from institutions to inanimate objects. Let's say that your project is about low-cost open devices for people with disabilities: the relations between individuals with disabilities, the associations of therapists and companies producing technical devices and how this ecosystem operates, are relevant for you to map their interaction and how they influence each other.

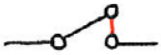
STEP 2.
Detecting the actors and relationships



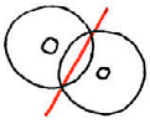
What are the critical relationships that can scale?

The second step is to come up with relations that make the interaction possible between the actors. These could be from interactions like "collaborating" and "influencing", to affiliations such as "being a member", "belonging to a category", "similarity". For instance, if one is interested in understanding the lobbying activities of a certain community, one would expect to find official as well as organic links that make up the bigger social network. There are four general categories to help you think about relationships:

Transmission Networks
Something actually flows: water flows, electricity flows, money flows, and news flows... They are usually physical and they could be broken, like a pipe.



Interaction Networks
The connection is an event at a specific time. You email someone; you buy something; we do an exhibition together... Something is passed during a contact.



Attribution Networks
The connection is an expression of a relationship. You are my friend, I love you, you trust him, she recognizes you... Visible only if you state it.

Affiliation Networks
The connection is a belonging to a group or category. We are in the same school; things are in the same category; organizations connected by board members... Linked by correlation, similarity or membership. Implicit.

The relationships you choose will more or less fall into one of these categories. Needless to say, these categories are here as guidance to start thinking about relationships; you can get creative and introduce relationships outside of these categories.

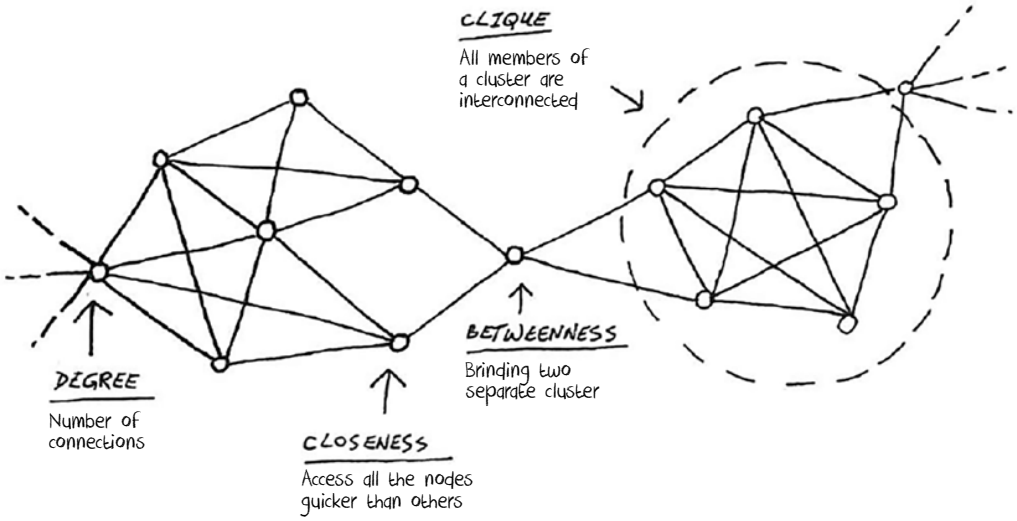
STEP 3.
Compiling data & making the map

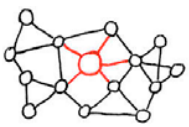
Start gathering data after you have listed the actor and relation types. The best way to organize your data is to put it into a spreadsheet: a list of relations. On each row, starting from the left, "from" node types and names, to the right "to" node type and names; at the centre a single column Edge Type to represent the relationship in between. Also, add weight if you need to.

Hand drawing the network helps a lot. Start drawing circles, writing names and connecting them with lines, so you can generate a sketch for your network map.

#	1	2	3
Node Type	Person	Person	Person
Node Name	Sara Wilson	Ahmad Suphi	Sarah Wilson
Edge Type	COLLABORATES	COLLABORATES	LIKES
Node Type	Person	Person	Person
Node Name	Ahmad Suphi	John Travolta	John Travolta
Edge Weight	1	1	2

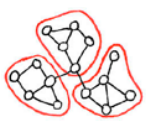
STEP 4.
Analysing Network Maps





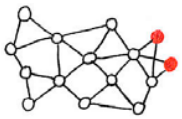
Centrality

Who are the most important actors and what are their locations in the network? Who are the connectors, leaders; who bridges, who isolates? What is the position of actors within clusters; who is at the core of the network and who is on the periphery?



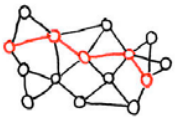
Clusters

What organic groups or clusters exist in a network? The structural holes between the clusters as well as the bridges between them are as important as the clusters themselves.



Equivalency
Which actors are alike?
Determining actors who play a similar role and have similar positions.

Graph Density
How well connected is a network compared to other networks? Comparing the density of networks, as well as the connectivity of different regions within a single network.



Shortest Paths
What is the distance between two actors?
What indirect relationships exist?
Revealing normally invisible connections and the degrees of separation between actors.

Graph Diameter
What is the longest path in the network? Finding the reach: how long it will take at most to reach any node in the network.

About the digital tool: Graph Commons

**Graph Commons is a collaborative platform for making, analysing and publishing network maps.
It empowers people and organizations to transform their data into interactive maps and untangle complex relations that impact them and their communities.
Graph Commons members have been using the platform for data research, investigative journalism, strategizing, organizational analysis, civic activism, archival exploration, art curating and other similar things.**

www.graphcommons.com

Source:

Graph Commons, Part I: Creative and critical use of complex networks, Part II: Mapping Networks, Part III: Reading & Analyzing Network Maps, www.graphcommons.com/help

Related tools

**Gephi, www.gephi.org
Graph Tools, www.graph-tool.skewed.de**