

SOCIETAL
PLATFORM

NETWORK MAPPING & ANALYSIS



how-to guide

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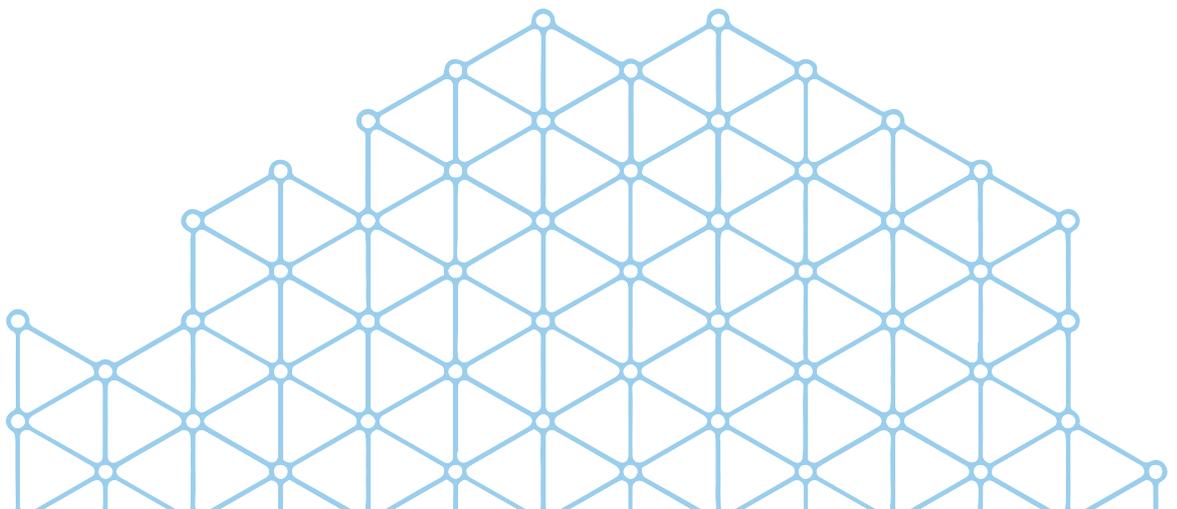
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NETWORK MAPPING & ANALYSIS

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About the guide

In a world of continuously growing societal challenges¹ which are complex, dynamic and highly contextual, networks could play a transformative role in resolving the challenges. Catalysing networks is key to enabling a sustainable learning ecosystem which could constantly sense and respond to societal problems (by means of dissemination of resources, contextual innovations, change of norms, aligning efforts, shifting power, etc.). Societal Platform Thinking emphasises the importance of network effects and facilitating interactions between and within formal and informal networks, involving state, civil society and markets, to catalyse large-scale systemic change². Any organisation engaged in a Societal Platform approach thus needs to have an understanding of the existing networks and the ability to plan, develop and catalyse the network, in the context of their mission.

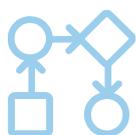
Network development as a method can help in answering the questions around the existing state of networks and the development of a desired network. It consists of four stages:



**NETWORK
MAPPING**



**NETWORK
ANALYSIS**



**NETWORK
PLANNING**



**NETWORK
IMPROVEMENT**

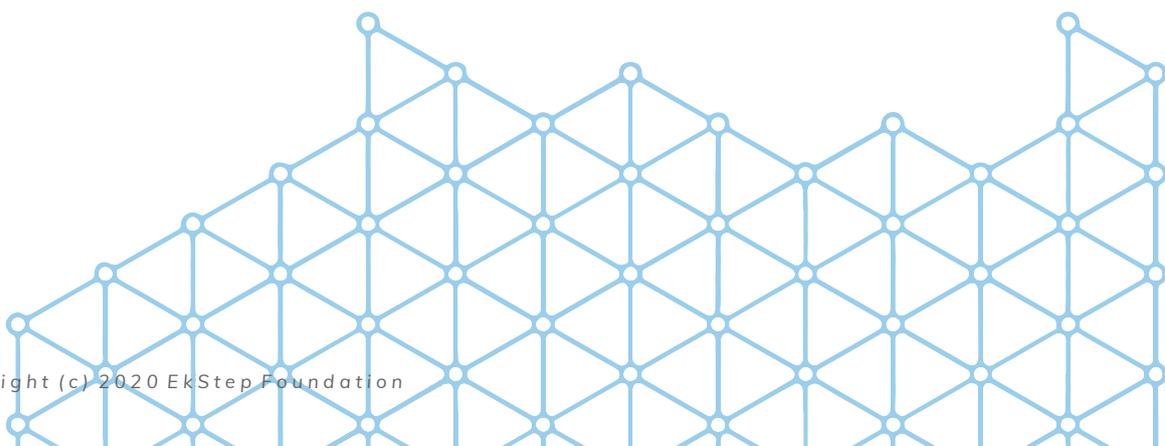
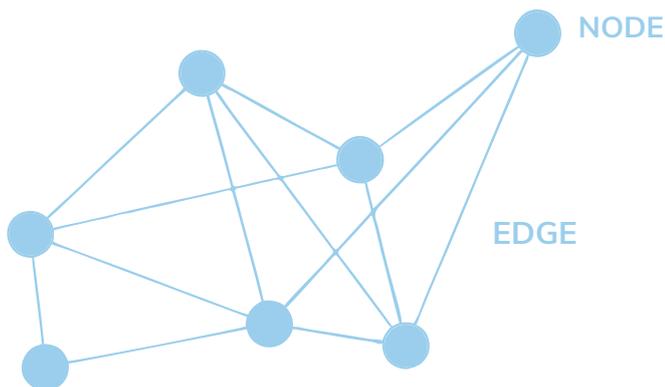
¹ For example, low learning outcomes of students in a particular community may not always necessarily be a result of poor school infrastructure, or inadequate learning or teaching methods. Inadequate dietary intake may lead to lack of focus and concentration. The home and community environment may not be supportive of education. Discrimination by school employees or peers or the education system based on caste, religion, gender, race and other factors could result in depression, demotivation, to name a few. On the ground, any of the stated or unstated conditions, or a combination of the conditions could be a reason for poor learning outcomes. See, <https://societalplatform.org/the-idea/systems-thinking-in-the-context-of-societal-platforms/>

² Societal Platform. (2017). A Systemic Method to Resolve Complex Societal Challenges. [online] Available at: <https://societalplatform.org/the-idea/societal-platforms-a-systemic-method-to-resolve-complex-societal-challenges/>

The guide is developed to serve as a reference framework and provide processes to help consultants and organisations engage in the network mapping and analysis process. Network mapping and analysis, also called Social Network Analysis (SNA), is a process that helps to understand the behaviour of networks. It focuses on the entities in a network, the overall structure of the network and the interactions between the entities.

A network primarily consists of nodes (network entities) and edges (interactions between the network entities).

- **Node** (entity) is commonly defined as a thing with distinct and independent existence. It can be an individual, institution or even a resource. In this guide, we define an entity as anything which can be expressed as a noun and has the ability to influence decisions.
- **Edge** (Interaction) is an action that describes what a node does with respect to another node. For example, node A provides content to node B. 'Provides content' is the interaction here. Interactions are typically expressed using verbs.



Overview

Networks, by nature, are heavily dependent on context. In the network development process, the information about the entities and the interactions between them serve as the fundamental resource. Thus, it becomes imperative to ensure a participatory process where information is gathered from all possible entities who will make up the network. For example, in the mapping of an interaction between a community group and a non-profit, the mentioned two actors would be better placed to give (or validate in some cases) the required information. It is important to have a systematic framework with basic guidelines to develop a holistic network. The following sections will serve as the reference to engage in the network development exercise.

1. Context
2. System representation
3. Actor mapping
4. Network mapping and analysis

The guide restricts itself to network mapping and analysis and does not focus on network planning and improvement.

SECTION 1

Context

Setting the context at the beginning of any participatory and interpretative process is essential to success. It helps the participants at an early stage to internalise the foundational aspects that should drive the thinking during the network development process. The context primarily looks at the Societal Platform mission and the mental models (such as attitudes, beliefs and values) around the societal challenge. Context can be explored through the following two exercises:

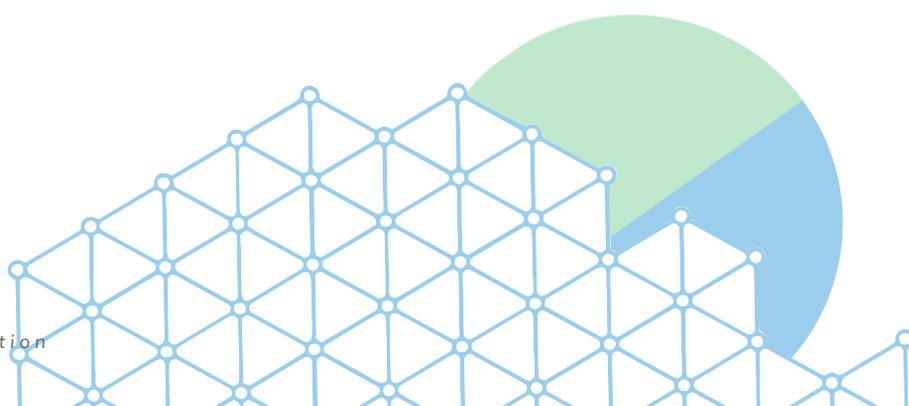
SECTION 1.1

Mission

The mission guides the thinking and actions behind each step, as the actions at each step are expected to be in the context of the mission. It is necessary to ensure alignment with the mission at all stages of the process. To explicitly state the mission for comprehensibility, it can be described with respect to the following factors:

- The societal challenge the mission wants to address
- The goal the mission wants to achieve
- The outcomes required to achieve the goal
- The individuals and institutions who the mission envisions to reach
- The scale in terms of geography and the number of individuals or institutions
- The timeline to achieve the mission
- The domain within which the challenge is fundamentally situated

For example, the societal mission of EkStep is to improve literacy and numeracy by increasing access to learning opportunities for 200 million children of India by 2020. In the process of describing the mission, deliberating on each of the above-mentioned points can enhance clarity for everyone engaged in the network development process.



SECTION 1.2

Mental Models

Mental models are the mental representations of the state of affairs. This exercise helps us to understand the system and the actors in it from the belief-system perspective. It is about interpreting how various actors have perceived the reality of the societal challenge and the system associated with it.

1. Identify the current actions in addressing the challenge - by state, civil society and market actors.

For example, for a malnutrition problem, one of the direct measures adopted by different actors is to fortify essential foods with appropriate nutrients.

2. Identify the key assumptions and trends driving the policy development, programme design and public discourse.

For example, the mid-day meal programme designed to address malnutrition problem could be based on certain assumptions, like, the schools will be able to cook nutritious food keeping in mind the context of the school students, and/or could be based on the trend that social sector programmes need to leverage existing systems—in this case, it would be the school system.

The information gathered through the above exercise can reveal biases and theories of how various actors think the system works. It could lead us to questions that can enable a deeper understanding of the system and can help during the network development exercise. Take for instance, with the above two examples, it could lead us to questions, like, do actors think fortifying foods can be a sustainable solution? Do the actors think it is necessary to work with local people for local solutions? Does the ecosystem feel that it is important to drive initiatives through policies?

KEY CONSIDERATION

This exercise will only help in developing a basic understanding of the context and why actors and institutions are approaching the challenge in a certain way. Long-term ethnographic work will be required to get a deeper understanding.



SECTION 2

System Representation

Networks are about relationships and interactions between entities in a system. A system representation helps to structure a system and gives an idea of the entities involved. It will serve as the foundation for detailed system diagrams of various types, whenever required. It allows experimenting with the topics and boundaries of the concerned system.

STEP 1

Identify the focus area

The focus area could be different at different stages of network development—keeping in mind that a system representation will be too complex to develop, for all focus areas at once. Thus, the first step is to narrow down to one focus area. The questions that could help in identifying the focus area are:

- What are the action spaces—areas where you work or expecting to work—as part of your strategy?
E.g., Health system, Education system, etc.
- What is your area of focus within the action space?
E.g., Public Health System, K-12 Education system, etc.

The final decision on the focus area is primarily dependent on the context and the strategy stage at which the system representation is done.

STEP 2

Establish the boundary

Identifying the boundary of the system and making it clear is vital to clearly distinguish between the elements encapsulated within our action spaces and the elements in the environment that surrounds the system.

To develop the boundary of the system, the below steps are recommended:

1. State the intended final outcome of the mission
 - In the case of ShikshaLokam's mission— *enable and amplify leadership development opportunities for individuals and institutions engaged in K-12 education systems*—the outcome would be, 'enable and amplify leadership development opportunities'.
2. Bring out the core idea—the mission is intended to create or enable (e.g., *leadership, learning opportunities, etc.*)
3. Develop the boundary in the context of the focus area (identified in step 1) and the core idea
 - For ShikshaLokam, the boundary will be 'K-12 education system in the context of leadership', i.e., entities within the K-12 education system which have some effect on leadership, either directly or indirectly, will only make up the system. *Taking the example of tuition teachers, they would lie within the system in the case of a general boundary of a K-12 education system. Whereas, when combined with the context of the mission, tuition teachers would lie in the outside environment, as they do not have adequate relation with education leadership or education leaders (e.g., principals, teacher leaders and School Management Committee (SMC) members).*

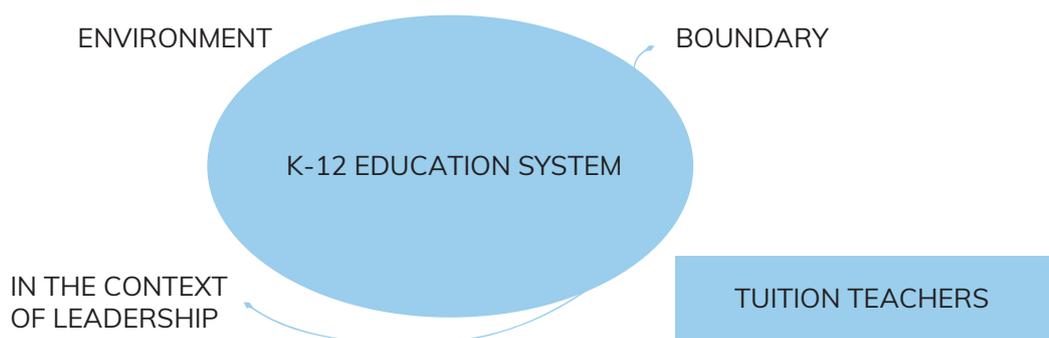


Figure 1. Outline of the system map

STEP 3

Identify the sub-systems

Sub-systems that make up the broader system could vary depending on the topic. The topic can be focusing on the domain, geography, nature of work (functions) or service-flow (administration), depending on the mission.

- For example, in the case of a mission to democratise knowledge among medical professionals, a service-flow approach could identify sub-systems like:
 - Primary care, secondary care, tertiary care, and laboratory and diagnostic services.
- In the case of developing school leadership opportunities, grouping by domain and administration-flow could lead to sub-systems such as political, administration and civil society, within which another level of grouping could be based on school, cluster, block, district, and state.

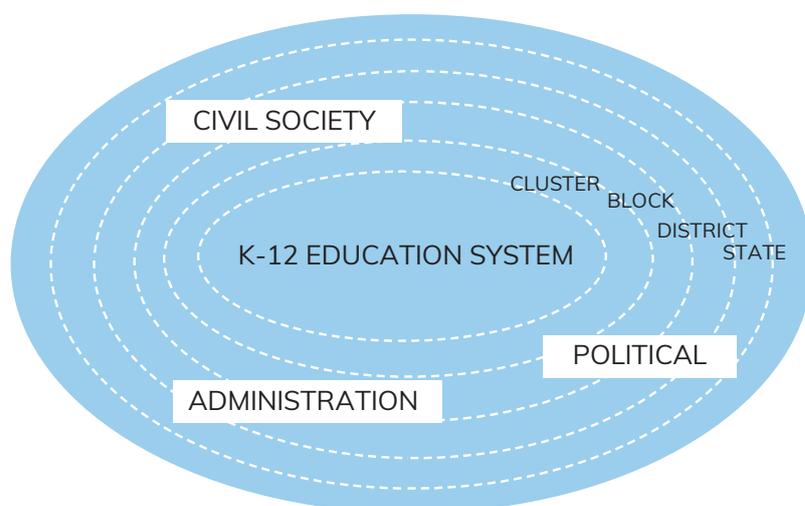


Figure 2. Representation of sub-systems

STEP 3

Identify the outside environment

Identify the sub-systems outside the boundary which has some sort of exchange with the components inside the system. For example, in a public health system, private health financing may lie outside the system but still have considerable influence on the system and its components.

SECTION 3

Actor Mapping

Actor mapping is one of the most important steps in network mapping. It helps in populating nodes required in the network mapping process. The following points could serve as rough guidelines to come up with actors (individuals, institutions and other relevant entities).

1. Start with identifying, in general, the actors³ in the context of the mission. The system map along with the domain knowledge of the participants could serve as a source of information to populate the initial set of nodes.
2. Identify actors who own or have access to assets which can help in achieving the mission.
3. Identify actors influenced by initiatives and/or outcomes of the Societal Platform mission.
4. Identify actors with respect to the platform functions.
 - a. Who are the actors involved in solution development?
 - b. Who are the actors contributing assets to the platform?
 - c. Who are the actors creating, curating and consuming solutions and assets?
5. Identify actors who are often overlooked in the system. Societal Platform networks need to recognise and catalyse these actors, which, in turn, can ensure the involvement of all possible actors.
6. Identify actors from different perspectives. The following questions could help to direct the thinking:
 - a. Who are the stakeholders in terms of institutional roles (e.g., regulatory actors, cultural actors⁴, authorities, etc.)
 - b. Who are the stakeholders in terms of power?
 - i. Who were the actors responsible for creating the problem?
 - ii. Who has the power to fix the problem but are not doing so?
 - iii. Who are geographically relevant to the issue?
 - iv. Who all are working to fix the problem?

³ Actors (in other words, nodes), here, can be broadly defined as any thing which can make decisions. Apart from individuals and institutions, it could also be collectives, communities and even software and algorithms.

⁴ Cultural actors are actors who have a strong influence on the culture of society. It could be religious leaders, artists, community leaders, activists, etc.

c. Who are the actors controlling resources? (Resources could be money, information, data, etc.)

i. Who authorises it?

ii. Who can use it?

iii. Who can inspect it?

iv. Who can open it up?

v. Who owns it?

vi. Who operates it?

vii. Who pays for it?

7. Identify the entities, which may not be an actor as defined earlier, (e.g., policies, trends, issues, etc., unlike individuals and institutions) influencing the problem.

SECTION 4

Network Mapping and Analysis

The above three sections set the stage with respect to context and the initial inputs useful for network mapping and analysis. Network maps capture the structure of the network relationships (e.g., central roles, clusters, etc.). Network analysis helps in assessing networks in terms of its connectivity, structure and dynamics, and enables an understanding about various aspects of the networks such as access, interactions, resource flows and power.

SECTION 4.1

Preliminary Actions

Network mapping and analysis is not an exhaustive process. We could develop a number of networks and also a network of networks, but it is too complex to have one fully comprehensive network for a Societal Platform mission. Thus, our process can have layers of networks.

The preliminary activities such as identifying a goal for which a network map is needed will help establish clarity and can guide the process in ensuring alignment with what we are trying to understand through mapping and analysis.

KEY INFORMATION

Preliminary actions are suggested to ensure that the mapping and analysis is done to support the objectives and activities that the mission wants to achieve, rather than getting involved in developing a generic network map



EXAMPLE

We will use the case study of a network mapping exercise done for ShikshaLokam, to illustrate the process of mapping. The mapping exercise was performed in the context of ShikshaLokam's goal - 'To drive adoption and greater relevance with 150000 education leaders in India by March 2020'. Education leaders refer to principals (or Head Masters or Head Teachers), teacher leaders and School Management Committee (SMC) members.

1. Identify the goal

The goal here refers to any Societal Platform goal a mission leader⁵ or an organisation involved in the Societal Platform mission wants to achieve. For example, ShikshaLokam's goal was to drive adoption and greater relevance with 150,000 education leaders in India, by March 2020.

⁵ A mission leader is an organisation or a group of organisations leading a Societal Platform mission in terms of defining the mission, developing the strategy, aligning relevant stakeholders and catalysing networks, to name a few.

2. Develop questions

Deconstruct the goal to develop questions that could guide the mapping and analysis process. In this example, it is clear that access to education leaders needs to be ensured to then drive adoption and relevance through useful interactions. The questions would be:

- a. How many education leaders do the network currently have access to?
- b. How do you ensure access to 150000 education leaders?
- c. How do you ensure adoption and relevance for 150000 education leaders?

Once you have a clear sense of the goal and the questions for which the network needs to be mapped and analysed, we can start with the mapping process.

KEY CONSIDERATION

Identify the network mapping and analysis application software that will be used to map and analyse the data gathered through the process. The application needs to offer possibilities of developing networks at scale using nodes, relationships and their attributes, and analysing networks to uncover the workings of it. For example, [Gephi](#) is an open-source network visualisation and analysis software.



SECTION 4.2

Network Mapping

In this guide, the network mapping exercise for Societal Platforms focuses on mapping the current network and the desired network in the context of the goal identified. It is to ensure a holistic mapping process that would deliver necessary insights and information to achieve the goal.

The initial step that needs to be done in this process is to define the objective. A well-defined objective can serve as an anchor to contextualise the network mapping process with respect to the goal and the questions identified. In the ShikshaLokam example, the objective was stated as, 'To map ShikshaLokam's current network, and the desired network that can drive adoption and relevance with 150000 education leaders in India by March 2020'. The example provides a sense of how to define the objective.

Once the objective is defined, follow the steps below to map the network:

KEY CONSIDERATION

- Throughout the network mapping process, it is important to keep in mind that all the steps are performed in the context of achieving the objective.
- The methodology to collect data can be of different types. In order to ensure the accuracy of the data, a participatory data collection process where you engage with relevant actors is critical.



- Ensure the data is collected in the format — which can be used directly or easily converted to a format — required for the identified network mapping and analysis application. Typically, data is collected (across all the following steps) in a spreadsheet software (see Annexure 1).



1. Identify the scope of the network

As mentioned earlier, several networks can be formed, which can then be combined to form one single network depending on the context. In the ShikshaLokam example, we had focussed on mapping the network for one programme. The plan was to map separately for each programme and then combine it to understand the entire network.

You can similarly choose to do the mapping process according to any particular aspect of the mission (e.g., programme, geography, domain, etc.) that you deem suitable. It is important that it should be able to deliver a comprehensive network when the micro-networks (i.e., mapping for one geography/programme gives you one micro-network) are mapped together.

In this case, the programme identified was the ‘School Development Index (SDI)’ programme, which is an assessment led school improvement programme. It involves solutions such as learning management solution (e.g., to create courses), assessment solution (e.g., to do assessments) and improvement project solution (e.g., to create and manage improvement projects).

2. Identify all the nodes involved (current nodes) in this programme

- It would be useful to first populate all the nodes that come to your mind, without referring to any resources or through prompts.
- Secondly, refer to the entities discovered in section 3 (actor mapping) and identify which are the ones involved in this programme.
- You can use the prompts in section 3 to identify more entities with respect to this programme.

3. Identify all the new nodes (desired nodes) that you need in the programme that will help to drive adoption and relevance with the education leaders.

- Similar to the previous step, populate the nodes that you could immediately think of.
- One of the useful ways to proceed with this process is to imagine which are the entities that can contribute to solution and asset development in the context of the goal (drive adoption and relevance).

4. Identify the nodes to which the organisation is directly connected

- The organisation (e.g., *ShikshaLokam*) will be the central actor and the core of the map.
- Map the current nodes to which the organisation is directly connected in relation to the programme.
 - In *ShikshaLokam*, some of the entities it is directly connected to are NGOs (e.g., *Mantra4Change*), government institutions (e.g., *Delhi Commission for Protection of Child Rights (DCPCR)*), etc. as far as the ‘School Development Index’ programme is concerned.

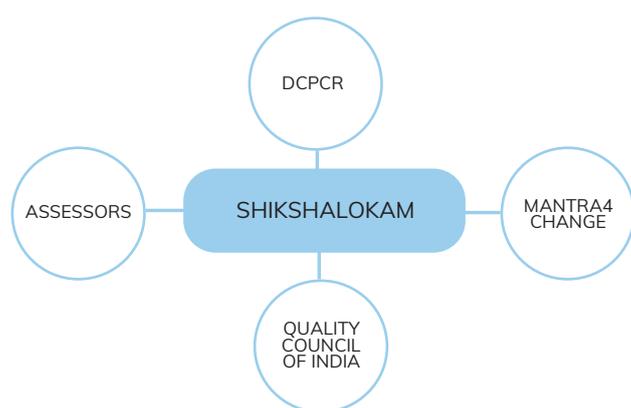
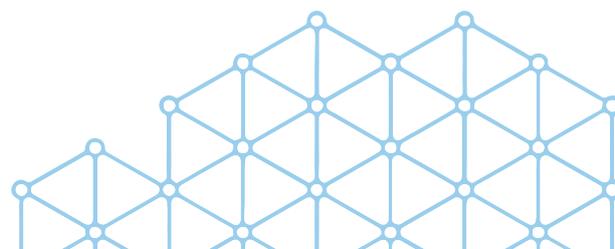


Figure 3. Directly connected nodes

5. Map the path that leads to the participants (See Figure 4)

- Participants are individuals and institutions (e.g., *education leaders for ShikshaLokam*) for whom the Societal Platform mission is intended to enable.



- Take each immediate node (connected to the organisation) identified in the previous step and map their path to the participants.
 - o The path to the participants from the immediate connected nodes might include several nodes and interactions.
 - Interactions can be of any type (e.g., consumes data, creates content, conducts workshops, etc.)
 - State the interaction between all connected nodes, as simple as possible. 'Conducts consultative meetings' is an interaction between DCPCR and headmasters. You can make use of verbs to describe different interactions.
 - Interactions in the context of a platform typically tend to be of the following types: create, curate and consume.
 - o For example, Mantra4Change (NGO) identified in the previous step consumes data (about schools) from ShikshaLokam and provides reports and improvement plans to the education leaders. Mantra4Change enables access to education leaders in 5000 schools (approximately 25000 education leaders) for ShikshaLokam.

The previous two steps help to answer one of the identified questions: How many education leaders do the network currently have access to? In the ShikshaLokam example, the current access through the school development index programme is 5000 schools. ShikshaLokam expects at least 5 education leaders in each school to be involved in the programme, so it will be 25000 education leaders.

KEY INFORMATION

The School Development Index programme is a government programme so it is important to note that there will be no new schools that will get added. The programme already has access to all the schools in the region. The mapping thus is not focused on increasing the reach, and is performed to envision adoption and relevance. ShikshaLokam has several other programmes which would contribute in reaching more participants, in order to ensure 150,000 education leaders are involved.



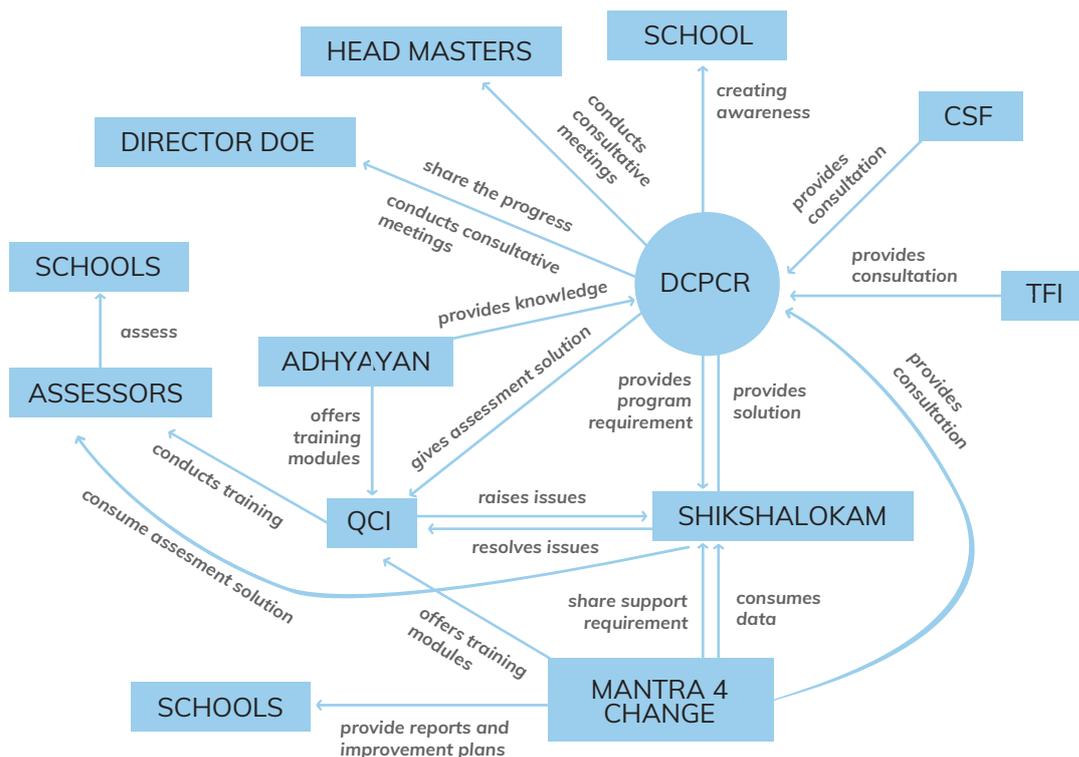


Figure 4. Current network of SDI programme from ShikshaLokam perspective.

6. Identify the nodes to which you want to connect

- This step talks about potential nodes — nodes the organisation wants to connect directly, which they believe will increase the access in terms of the number of education leaders and/or contribute in improving relevance.
 - Considering that the objective is to reach 150000 education leaders, the mapping should aim for more than 150000 leaders (across programmes).
- The nodes can be entities identified in step 2 (intermediate nodes) or new nodes which can lead the organisation to more participants.

7. Map the path that could lead to the participants

- Follow the same instructions as step 2, but with the nodes identified in step 4.

The steps 6 and 7 help to answer the question: How do you ensure access to 150000 education leaders? The potential nodes identified in these steps will help to showcase how access can be improved.

8. **Map the desired interactions** (i.e. interactions that you want or are needed in the network) that would ensure adoption and greater relevance with 150000 education leaders. For example, ShikshaLokam 'co-creates solutions' with NGOs is a desired interaction that is expected to improve adoption and relevance with education leaders.

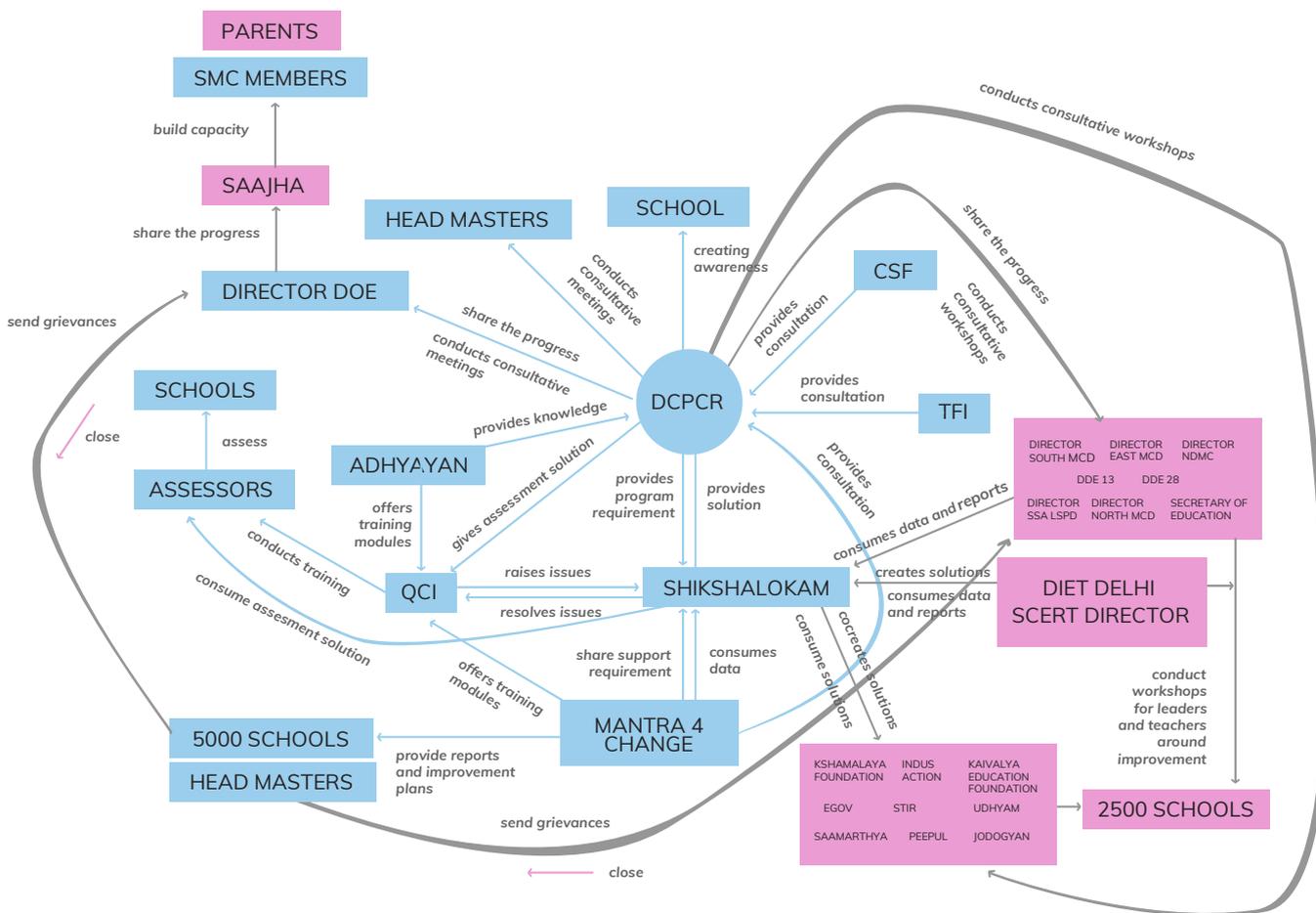


Figure 5: Desired network of SDI programme from ShikshaLokam perspective. (Pink post-it notes represent desired nodes and grey arrows indicate desired interactions)

The above network map tries to answer the question of how to ensure adoption and relevance for 150000 education leaders, from the SDI programme perspective. When network maps of all the other programmes are combined, it will be able to produce the map for the identified goal.

9. **Develop the map further with the addition of network attributes**,⁶ so that the network analysis process can lead to more insights and information. Some of the network attributes are:

⁶ Network attributes are properties of nodes and interactions which can provide more information about them.

- The type of node (e.g., NGO, consultant, government institution)
- The type of interaction (e.g., connected or desired)
- The nature of the interactions (e.g., programme relationship, administrative relationship, funding relationship, etc.)
- The quality of the interactions (e.g., good, bad, moderate)
- The volume of the interactions (e.g., funds 10 lakhs)
- The frequency of the interactions (e.g., high, medium, low)
- The orientation of the interactions (e.g., directed, two-way, etc.)

You can also use arithmetic values (numbers) in representing network attributes, to make it easy for quantitative analysis. For example, for frequency of the interactions, you can give 3 for high frequency, 2 for medium and 1 for low frequency.

KEY INFORMATION

The above-mentioned attributes are to give a basic idea about the aspects we can include. There can be more attributes depending on the context and the information you have and you need. It will also be based on the analysis you would like to do. You may want to include the date and time of each interaction, or have categories under which the nodes can be clubbed and so forth.



SECTION 4.2.1

Mapping the belief system with respect to the goal

KEY CONSIDERATION

The exercise is important in case the mapping was done only with inputs from a few stakeholders



All network maps can be complemented with a mapping of the belief-system of the actors. The belief system mapping would consist of actors who make up the network map, and their relationships (i.e. what is their belief level) with the overall goal and the desired interactions we would like to enable. This helps us to make sense of the network map more in alignment with the goal.

1. List all the desired interaction identified in the previous section.
2. Populate the nodes which are involved in one or more desired interactions.
3. Quantify the degree of belief of each stakeholder in every desired interaction they are involved.
 - In Figure 5, one of the desired interactions is DCPCR 'conducts consultative workshops' with NGOs. Here, what each NGO's and DCPCR's beliefs with respect to the interaction need to be mapped. The mapping can be any format, you can use numbers 1, 2 and 3 to say low, moderate and high-level belief respectively.

SECTION 4.2.2:

Mapping for a particular focus area

The mapping can also be done at a much more focused and detailed level with different aspects such as resources and power, as covered in the actor mapping session, which can then form different layers of networks, even for one particular programme or geography or domain.

In the case of a goal such as, 'to drive adoption and relevance', the following steps can be followed:

1. Identify the key resources (e.g., data, expertise, technology, content, etc.) flowing within the network.
2. Identify the core actors based on the information available and with respect to the goal identified.
3. Identify the key resources based on who gives and who gets and map the connections.
4. Develop the map further with the network attributes mentioned above along with more attributes that could enrich the network map.

Network Analysis

Once you have a network with nodes, interactions and their attributes, network analysis as a method provides various measures (indicators to assess the overall network and the interactions between actors) which can be used to derive insights for different contexts depending on your objective. The questions you want to answer will drive this process, such as,

- When two nodes are likely to interact? (e.g., two nodes are likely to interact when there are assets useful to develop solutions)
- What are the important attributes that contribute to the interaction (e.g., open access to assets enable a particular interaction)
- How much resource a node has to expend in order to make a connection?

Social Network Analysis (SNA) software can assist in producing the measures required to answer the questions. The measures are readily available in SNA software, which use graph algorithms to process nodes and edges to uncover information about the network.

Some of the measures available are,

- Centrality measures such as betweenness centrality⁷, closeness centrality⁸, degree centrality⁹, etc.
- Connectivity measures such as average degree, density, path, etc.
- Network size measures such as network diameter, average path length, etc.

The measures help in understanding the behaviour of networks. The following sections talk about some of the ways networks can be analysed with an example of a related Social Network Analysis (SNA) measure (can be found in SNA software).

⁷“Betweenness Centrality is a way of detecting the amount of influence a node has over the flow of information or resources in a graph. It is typically used to find nodes that serve as a bridge from one part of a graph to another.” See, Graph Algorithms by Amy E. Hodler and Mark Needham (O’Reilly). Copyright 2019 Amy E. Hodler and Mark Needham, 978-1-492-05781-9.

⁸“Closeness Centrality is a way of detecting nodes that are able to spread information efficiently through a subgraph.” See, Graph Algorithms by Amy E. Hodler and Mark Needham (O’Reilly). Copyright 2019 Amy E. Hodler and Mark Needham, 978-1-492-05781-9.

⁹“Degree centrality counts the number of incoming and outgoing relationships from a node, and is used to find popular nodes in a graph.” See, Graph Algorithms by Amy E. Hodler and Mark Needham (O’Reilly). Copyright 2019 Amy E. Hodler and Mark Needham, 978-1-492-05781-9.

KEY INFORMATION

The sections are to give a brief idea of the different analysis (possibilities) that can be done and what does it mean in the context of networks. Graph algorithms as part of the SNA software will help in processing the nodes and edges to help with the analysis.



SECTION 4.3.1

Analysing Connectivity

Connectivity is about the connectedness of nodes within a network. Analysing the connectivity of the network would involve the following:

At the node level,

1. Analysing degree of connectivity (i.e. how connected a node is?)
2. Analysing centrality of nodes (i.e. which nodes are central to spreading something or influencing other nodes in the network?)

At the network level,

1. Analysing density (i.e. how connected a network is? In other words, how integrated a network is?)

Example of an SNA measure: Degree centrality

Use: Find actors who are well-connected

SECTION 4.3.2:

Analysing Clustering

Cluster refers to how nodes are connected and how much they are connected (frequency of links). Analysing clustering aids in understanding,

- What are the different groups in a network? (e.g., actors involved in solution development, actors contributing assets, etc.)
- On what basis micro-networks within a network get formed and what are their characteristics?
- Hidden groupings and clusters in networks

Example of an SNA measure: Clustering coefficient

Use: Find the degree to which actors in a network cluster together

SECTION 4.3.3:

Analysing Network Type

“Analysing the network type is all about understanding how centralised or distributed the network is structured. It helps in defining many properties to the network such as how something will flow, which nodes will have influence and how quickly can one affect the entire network.”¹⁰

Example of an SNA measure: ‘Average shortest path length’ combined with ‘Clustering coefficient’

Use: Find whether the network has a decentralised structure

SECTION 4.3.4

Analysing Network Dynamics

1. “Diffusion and Contagion

How something spreads across a network?

- How something is spreading?
- What network structure gives rise to rapid or delayed spreading?
- How changing a given parameter can affect the spreading?

2. Robustness and Resilience

How susceptible is our network to failure both from random and strategic attack?

- What is the mechanism that holds it together?
- And when does it disintegrate?”^{10 11 12}

Example of an SNA measure: Modularity

Use: Find the robustness of the network against random external attacks.

¹⁰ Colchester, J. (2016). Network Theory: An Overview.

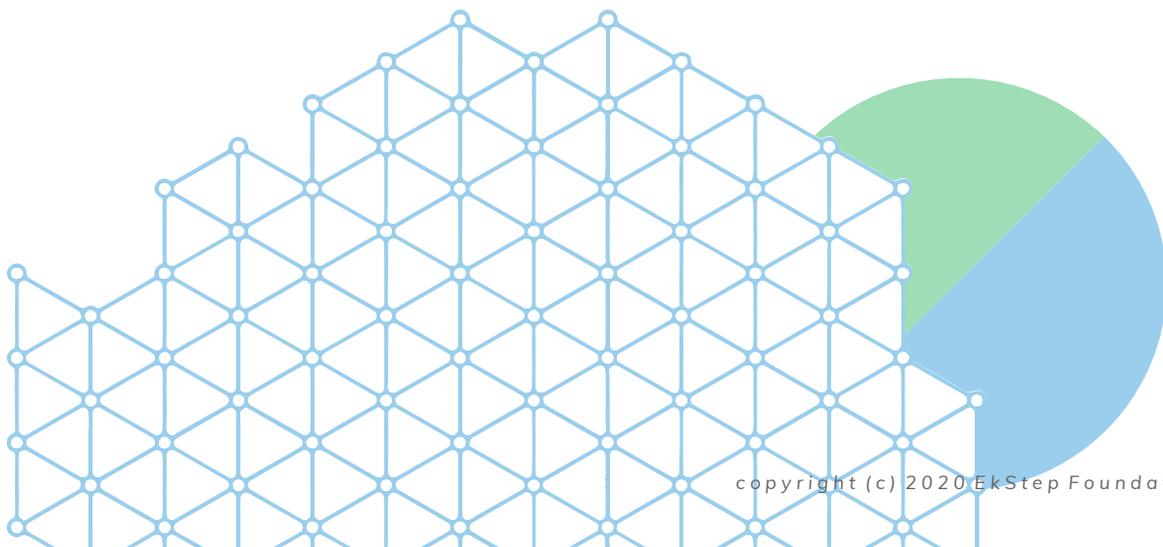
¹¹ Network Diffusion & Contagion - Systems Academy. Retrieved 20 May 2019, from <https://systemsacademy.io/network-diffusion-contagion/>

¹² Hill, A., Rand, D., Nowak, M., & Christakis, N. (2010). Infectious Disease Modeling of Social Contagion in Networks. *Plos Computational Biology*, 6(11), e1000968. doi: 10.1371/journal.pcbi.1000968

Conclusion

Network mapping and analysis can be a useful way to understand all the interactions happening in the network and the roles different actors play in the network—with respect to a specific Societal Platform mission. The ShikshaLokam example, particularly in the network mapping section, gives a sense of how such a mapping exercise can be done for any Societal Platform mission or goal.

A participatory process of involving all relevant actors across the exercises will be hugely beneficial in developing a holistic network and imagining new possibilities with the output that will come out of the network mapping and analysis process.



Annexure 1

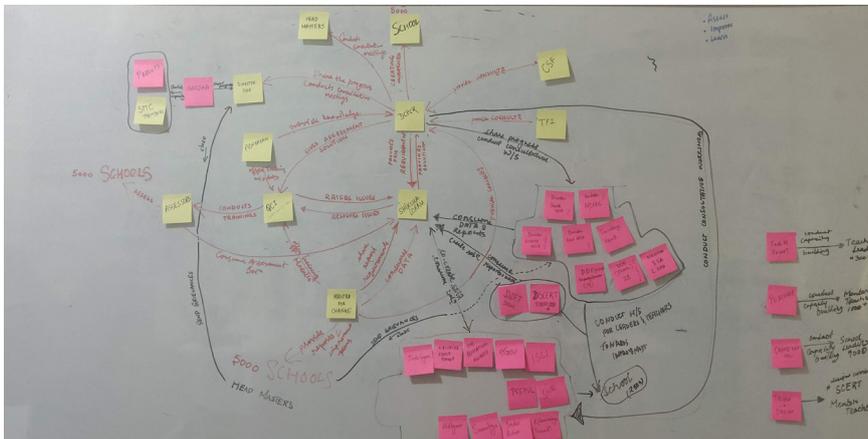
SHEET 1

NODE			INTERACTION ATTRIBUTES	
Source Node	Target Node	Interaction	Nature	Frequency
Mantra4Change	ShikshaLokam	Consumes Data	Programme	High

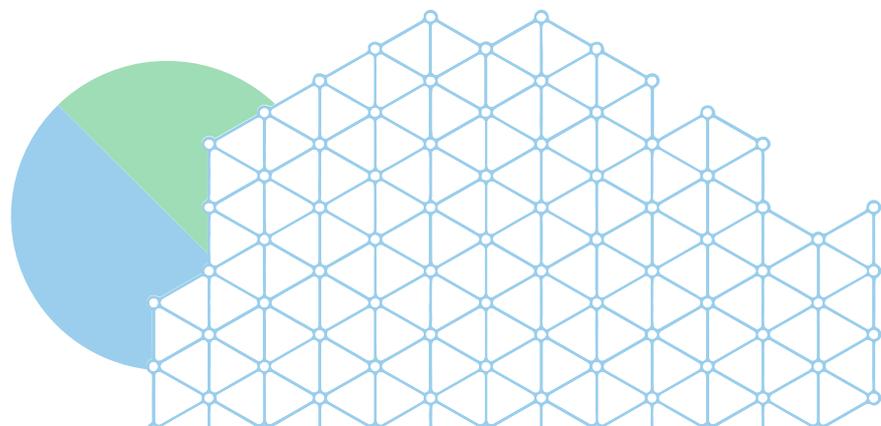
SHEET 2

NODE ATTRIBUTES			
Node	Type	Status	Country
ShikshaLokam	Platform	Active	India

Annexure 2



Network diagram from a workshop conducted by the Societal Platform team with Shikshalokam in 2019.



ACKNOWLEDGEMENTS

RESEARCH & AUTHOR

Naveen Varshan, EkStep Foundation

RESEARCH ADVISOR

Sanjay Purohit, EkStep Foundation

We would like to thank [ShikshaLokam](#) for their collaboration in practicing the method.

DESIGN

The Other Design Studio

We appreciate your feedback on the guide.

Please write with your comments, recommendations, and suggestions to Naveen Varshan at naveen@societalplatform.org

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