Networks of Work

Co-creating Hybrid Teams' Social dynamics, Collaborative Behavior, and Work Culture (Part 1)

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Executive Summary

In a post-geographic work landscape, where organizations are still exploring hybrid dynamics of work and culture, it is important to establish a methodology that would help companies understand and collaboratively shape spatial and digital patterns of social interaction among employees.

The primary goal of this study is to explore the methodological effectiveness of Social Network Analysis (SNA) combined with Participatory Action Research (PAR) for understanding and augmenting hybrid teams' social dynamics, collaborative behavior, and work culture.

The secondary goal is to use the results of the study as a lens for knowing "where to look and what to examine" when researching hybrid teams using the proposed method -- acknowledging that specifics pertaining to the results of this study are dependent on:

(a) the time-period when participants engaged in this study (peak of the Omicron variant); and,
(b) the team composition, company's organizational structure, and the type of work participants are tasked with.

In sum, this study aims to provide a point of view for (a) understanding hybrid teams by placing focus on team members' interactions and collaboration patterns; and (b), empowering employees to augment their interactions.

This research was conducted during December 2021 and January 2022 when majority of employee participants worked from home. The study is consisted of two parts. In part 1, we quantitatively mapped networks of social interactions for a total of four teams from two different organizations: a global technology company and a global design firm.

The primary analysis of results showed that the technology company's underlying work-culture was driven by a tendency towards more cross-pollination and inspiration from the outside of the immediate team as a driver for innovation. The team from the design firm, however, exhibited more cohesion between team members and was focused on efficiency and task delivery.

Moreover, the technology company teams relied on key individuals to drive and lead the project, whereas in the design firm decision-making was more distributed and consensus-driven. Finally, the comparison of teams' current vs the desired interaction networks revealed that employees seek more targeted interactions. In most cases, the desired network was "leaner" than the current network.

Part 2 of the study, which is still in progress and not included in this report, involves engaging research participants in the process of sensemaking by seeking their qualitative interpretation as well as co-creating their desired networks during design workshops.

0. Study Audience

Research into hybrid teams' dynamics using principles of SNA and PAR can be both scaled up to provide insight into the organizational culture and knowledge practices and scaled down to help shape desired rituals and behaviors in a single project. In a way, the methodology is size-agnostic, and therefore, the sample size is dependent on how big of a problem the organization wants to tackle. When it comes to who could benefit from this approach, we propose four main groups:

- **Real estate, facilities, and space design teams:** For the audience group involved in curating and designing spaces for employees, this approach helps to create or assign spaces that best serve the need of teams (in addition to individuals). In other words, using this method, this audience group can go beyond achieving employee satisfaction by accommodating for team productivity and culture.
- **Team leads:** This approach helps team leads to quantitatively and collaboratively frame team communication and connectivity, and therefore, include it as a measurable KPI for evaluating team success.
- **HR, Chief Innovation Officer, and Chief Technology Officer:** This approach helps them see and direct resources to previously hidden strategic connections in the organization that bust knowledge silos, shape organizational learning, and have social and cultural influence.
- **Employees:** This approach helps employees to take control of their learning and engagement by (a) understanding their place in the larger organizational dynamics; and (b) participating in co-creating their desired network of communications and collaboration.

1. Introduction: SNA & PAR

There is a quantitative social science that describes how information and ideas flow from person to person and how this flow of ideas ends up shaping the norms, productivity, and creative output of companies (Pentland, 2014). In a post-geographic landscape of work where organizations are still exploring hybrid dynamics of work and culture, using this science becomes even more relevant.

In this study, we used principles of Social Network Analysis (SNA) to quantitatively capture and analyze social dynamics in teams. We did so by inquiring employees' current and desired interactions with their team members.

Yet, it is often difficult to make locally relevant impact by relying on data that does not tell a story. Therefore, we couple the quantitative science of mapping social networks with the qualitative art of empowering employees to co-create their interaction patterns. That's when Participatory Action Research (PAR) comes into the picture.

Participatory Action Research (PAR), as a form of Action Research, is an approach to research that seeks to understand the world by trying to collaboratively change it (Lewin in Schein, 1996). To do so, it empowers

people who are concerned about and affected by an issue to take a leading role in producing and using knowledge about it. Therefore, the approach brings together participation, empowerment, ownership, and action for changing the current state (Boog, 2003, Groat and Wang, 2001, Noel, 2016, Mojtahedi, 2017).

In PAR, employees are included as part of the research team. In other words, employees are elevated from "research subjects" (referred to in traditional research) to "research partners", and the research is conducted "with" them rather than "on" them.

When combined with principles of PAR, SNA can help us not just ask but strategize action for key questions that most organizations are currently curious about:

- How to augment the ways employees in a hybrid team learn from each other and get work done
- How to socialize methods and behaviors that top teams in an organization use to collaborate
- How to tailor employees' recurrent and preferred patterns of communication to their personality traits
- How to facilitate the flow of the information and ideas between people on different organizational levels

2. Research Goals

The primary goal of this study is to explore the methodological effectiveness of Social Network Analysis (SNA) combined with Participatory Action Research (PAR) for understanding and augmenting hybrid teams' social dynamics, collaborative behavior, and work culture.

The secondary goal is to use the results of the study as a lens for knowing "where to look and what to examine" when researching hybrid teams using the proposed method -- acknowledging that specifics pertaining to the results of this study are dependent on (a) the time-period when participants engaged in this study (peak of the Omicron variant); and (b) the team composition, company's organizational structure, and the type of work participants are tasked with.

In sum, this study aims to provide a point of view for (a) understanding hybrid teams by placing focus on team members' interactions and collaboration patterns; and, (b), empowering them to augment those interactions.

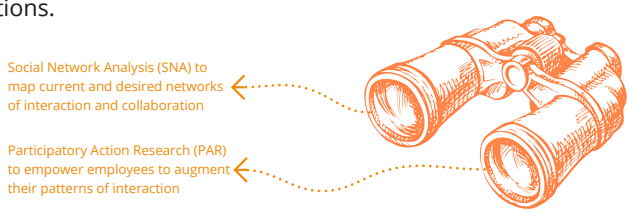


Figure 1. A lens for understanding and augmenting hybrid teams' social dynamics, collaborative behavior, and work culture.

3. Methods and Participants

This research project was framed as a mixed-methods study and consisted of two parts. In part 1, we quantitatively mapped networks of social interactions for a total of 35 participants in four teams across two different organizations: a global technology company and a global design firm.

Using an online questionnaire, we asked each team member to respond to the following questions:

- Role
- Personality type
- Work style
- Collaborative tools used to connect with other team members
- Current frequency of interactions with each team member
- Desired frequency of interactions with each team member

The results from the survey were analyzed using principles of Social Network Analysis. Later, the "current network" was compared with the "desired network" to understand team members' collaborative aspirations. Finally, similarities and differences in collaborative patterns between the technology company and the design firm were explored.

Part 2 of the study, which is still in progress and not included in this report, involves engaging research participants in the process of co-creating their desired networks during design workshops.

Although desired networks are mapped in part 1 and included in this report, the process of framing actions to get from current state to the desired state requires employee engagement workshops using principles of Participatory Action Research. Workshops are being conducted at the time of publication, so their results will be offered as an addendum to this report.

In sum, the approach to this study can be summarized in the following four steps:

Step 1. Mapping employees' current network of social interactions using principles of SNA.
Step 2. Mapping employees' desired network of social interactions using principles of SNA.
Step 3. Engaging study participants in sensemaking to unpack qualitative nuances in quantitative findings.
Step 4. Engaging study participants in the process of augmenting their current network to achieve the desired network using principles of PAR.

4. Findings

After organizing and visualizing participants' responses into network format, we studied each team's current and desired networks through the lens of 5 key properties:

- **Network size** refers to the quantity of nodes (or actors) in a network. Larger size means more support from people, more information and ideas, and higher social capital.
- **Network strength** refers to closeness between people. Higher strength in a tie means more interaction and more sharing between nodes (or actors).
- **Network range** refers to the degree that a network includes nodes (or actors) from different networks or units with different background
- **Network centrality** refers to the measure of importance of an individual node (or actor) within a network. There are different ways to define the involvement of a node with regard to its relationships with others, but a commonly used definition of centrality considers the role of the node in cross-pollination or connecting two different networks.
- **Network density** is a measure of how many ties between nodes (or actors) exist. In a dense network, most nodes (actors) are connected with one another.

4.1. Technology vs. Design Teams

The comparison of all four networks show that the three teams working in the technology company operate differently than the team in the design firm. Team 1, 2, and 3 have a higher range which is indicative of more reliance on ideation beyond the immediate team. Additionally, the teams in the technology company benefit from higher centrality -- highlighted green nodes in Figure 2 are responsible for cross-pollination. Reach beyond immediate team as well as higher centrality are key predictors of innovation.

Team 4, however, has a higher density compared to other three teams. This signifies more interconnectivity and verification of information between immediate team members resulting in more trust and higher efficiency (Leonardi & Contractor, 2018).

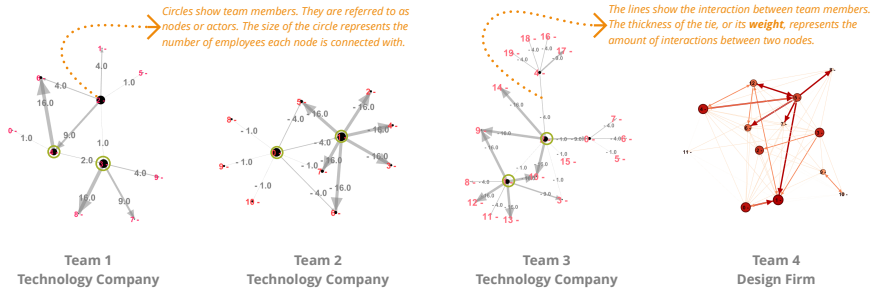
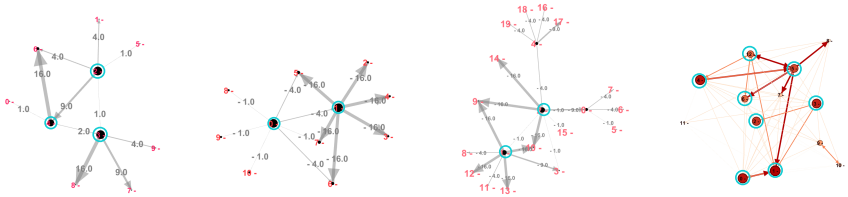


Figure 2. Team 1, 2, and 3 exhibit innovative behavior while team 4's dynamics are indicative of focus on task-delivery and efficiency -- highlighted green nodes signify actors responsible for more cross-pollination.

Another major difference between the technology company and the design firm teams can be inferred by comparing the degrees of various nodes across networks.

The teams in the technology company mainly rely on key nodes or actors to drive and lead the group. This is signified by the higher degree associated with those nodes. In other words, a few individuals are more connected and influential than others on each team.

In the design firm, however, decision-making is more distributed and consensus-driven (Figure 3). This might require more large group meetings. Alternatively, a majority of team meetings in the technology company are small and held among key actors.



Team 1
Technology Company

Team 2
Technology Company

Team 3
Technology Company

Team 4
Design Firm

Figure 3. Highlighted blue nodes signify actors who drive key decisions. Compared to the technology teams, decision-making in the design team is more consensus-driven, yet, it might require more large group meetings.

4.2. Current vs. Desired Networks

Prior to the pandemic, studies exploring current and desired networks always revealed employees' tendency towards higher quantity and/or quality of interactions in the desired network (e.g. Mojtahedi, 2017). For the teams in the technology company, however, that was not exactly the case.

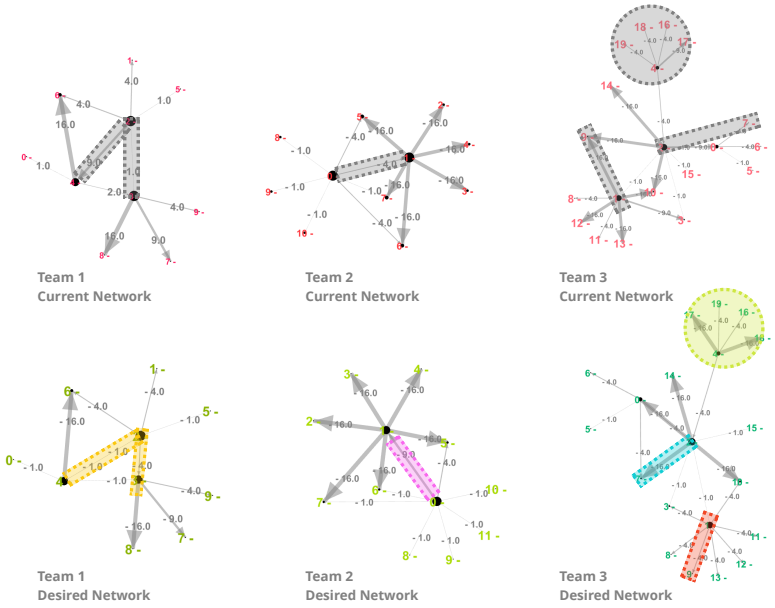


Figure 4. Teams in the technology company exhibited different patterns pertaining to their desired network.

The desired network for Team 1 and 2 changed in minor but important ways.

The highlighted yellow in Figure 4 indicates one actor's desire to shift the strength of their tie to an alternative node. In this scenario, the actor is not asking for more or less interaction than before but change in who they interact with.

The highlighted pink in Figure 4 shows that in their desired scenario, Team 2 asks for a stronger tie between actors who are responsible for cross-pollination. Providing conditions for the two actors to be able to connect in more effective ways should be a priority for this team.

Among all the networks in this study, Team 3 has the highest range indicating that team members seek other ideas from people outside of their immediate team. While the desired network maintains this characteristic, it indicates three key changes. Firstly, highlighted green shows a desire for stronger ties with outside inspirations. Secondly, as highlighted in blue, the actor with the highest degree in the network asks to redirect their interaction from an existing tie and establish the strongest tie possible with a node currently located at the periphery. Lastly, the highlighted red shows the two main actors in Team 3 prefer to redirect their strong tie with a mutual node which reduces centrality in the desired network.

5. Conclusion & Next Steps

The quantitative method of mapping collaboration patterns using Social Network Analysis (SNA) is most effective when coupled with Participatory Action Research (PAR). The coupling of these two methods helps us to:

(a) Make sense of the quantitative data: The weight of a tie does not provide enough information to determine its value. Certain connections among colleagues might not be frequent, but they could hold high value. Moreover, it is often not possible to know what a tie signifies -- video collaboration, email connection, or a meeting. During the participatory workshops, employees help interpret the ties among actors.

(b) Engage employees to augment their collaboration patterns: The goal of Participatory Action Research (PAR) is to empower people who are concerned about and affected by an issue to take a leading role in changing it by producing and using knowledge about it. During this process, employees not only unpack their current and desired networks, but also strategize about how to achieve the desired status.

In addition to the methodological implications of this project, the results of the study can be used as a lense for knowing where to look and what to examine in research studies that use similar approaches.

Three key findings of this study and their subsequent next steps can be summarized in the following:

1. Innovation vs efficiency: The technology company's networks had higher range and higher centrality which both are indicative of a work process that relies on outside inspiration and cross-pollination as key predictors of innovation. Alternatively, the design company's network had higher density and interconnectivity among immediate team members as key predictors of efficiency and focus on task-delivery (Leonardi & Contractor, 2018).

Next step: *To investigate the rhythm and tools that teams employ to gather inspiration vs drive efficiency.*

2. Who drives key decisions: The technology company's networks rely on a few key actors with higher degree. These key actors connect and coordinate with each other frequently and then reach out to others often independently. In the design company's network, however, decision-making happens in large meetings where most actors are present.

Next step: *To investigate how actors define the intent of their ties -- coordination, collaboration, or socialization.*

3. Leaner desired network: Prior to the pandemic, similar studies showed a tendency towards more collaboration and connectivity in the desired

network. In this study, however, teams' desired networks can be described as leaner compared to their current networks. In the desired, leaner network, employees expressed that they do not necessarily want to reduce their ties or the weight of their ties, but they prefer to redistribute them. Formation of new ties, disappearance of certain current ties, and shifting the weight of certain ties from one actor to another in the desired scenario are all examples of employees' ask for restructuring their current patterns of connectivity.

Next step: *To investigate not only the reasoning beyond and the value of restructuring the current patterns of connectivity, but also the process of getting to the desired scenario.*

Co-creation workshops conducted in Part [2] of this research will primarily focus on augmenting hybrid teams' social dynamics, collaborative behavior, and work culture.

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