2010 EEN Forum Notes

Session Name: Social Network Analysis and Evaluation

Session Date/Time: Monday, June 7, 2010, 1:15pm

Notetaker: Kim Damm

Main Themes:

- Social Network Analysis is a multidisciplinary research method that is increasingly being used to uncover relationships among individuals and groups in both personal and professional contexts.
- Understanding existing professional and social relationships and structures is vital to maximize communication, nurture supportive relationships and build efficiencies among coworkers and collaborators

Detailed Notes:

- Facilitated by Lou Nadeau, ERG, this session explores the potential utility of social network mapping, analysis and facilitation for environmental program evaluation. Social Network Analysis (SNA) is a multidisciplinary research method that is increasingly being used to uncover relationships among individuals and groups in both personal and professional contexts. The social network perspective assumes that: 1. Relationships among actors are important, 2. Actors are interdependent rather than autonomous, 3. Relationships represent a flow of material or non-material resource between actors, and 4. Network structures support or inhibit an actor's ability to act. Social network analysis in program evaluation was the topic of a special issue of new Directions for Evaluation.
- Understanding existing professional and social relationships and structures is vital to maximize communication, nurture supportive relationships and build efficiencies among coworkers and collaborators. This session will provide a general overview on the theory and practice of SNA, and will highlight examples of SNA research projects that illustrate practical use and application of SNA data in the environmental context. Following a brief presentation, participants will have the opportunity to "network" about social networking for environmental evaluation. This will be accomplished by means of small breakout discussions and a facilitated group engagement.
- Chris Ellis, NOAA, provided a brief introduction to SNA:
    - "Social network analysis is the mapping and measuring of relationships and flows between people, groups, organizations, computers or other information and knowledge processing entities" (Valdis Krebs)
    - Social networking essentially maps the relationships among people.
    - SNA creates quantifiable data through questions analyzed on number of data, uncovers relationships through questions and analyzes network structure based on key indicators.
    - Informal and formal networks provide different information.
    - Reasons to use SNA:
        - Identifies individuals playing central roles
        - Brings in isolated teams or individuals
        - Detects information bottlenecks
        - Identifies opportunities for improving the flow of knowledge
        - Accelerates the flow
    - Limitations of SNA:
        - Lack of anonymity
        - Difficulty getting people to report accurately and state information outwardly

        - Overstatement of connections
        - Missing data
        - Vagueness of terms (ie what is collaboration?)
        - While it does describe network links, SNA does not explain why these links form
    - Methodology:
        - Generally information is collected through surveys
        - Snowball sampling is a common method. Difficult to determine when you have achieved a strong sample.
- Ken Vance-Borland, the Conservation Planning Institute, provided information on a case study:
    - Lincoln County Conservation Stakeholders Network Study included the following goals:
        - Test utility of social network analysis for coastal conservation
        - Identify and engage stakeholders.
        - Allow stakeholders to think of how they might enhance their networks.
    - Survey questions included:
        - Who are key individuals with whom you have collaborated on sustainable natural resource projects or issues during the past two years?
        - Who are most critical to the success of policy initiatives?
        - Who do you look to for new or innovative ideas?
    - Social network maps:
        - Show who the key individuals are for collaboration
        - Lines on the map represent relationships
        - Pattern or relationships defined are core and periphery structure
        - People in center have numerous interactions
        - Around the periphery are people who have something to contribute to the overall process but are not part of the center of the action
        - Two degrees of acknowledgment of collaboration: 1. How many people names the person and 2. How many people name the person who named them
        - Maps are a one time snapshot
        - Can help organizations identify priorities for the future
    - Method of mapping relations among key managers in a consulting organization pre and post-intervention
        - Survey asked who employees share knowledge with
        - Nine months later, post-intervention, there was an increase in knowledge sharing
- Ken Genskow, University of Wisconsin Madison,
    - Conducted a post-hoc analysis after a two-year intervention. Noticed very little impact. People, however, did note a sense of increased network and connections. Goal was to bring organizations and resources together and not just individuals. This is an example of how a network can change the process.
    - Conducted a capacity assessment on watershed management. The intention was to assess the policy network to enhance its capacity.
        - Approached project through interviews. Survey asked the following questions: In absence of active network, who do people turn to for certain services? Who do they offer these services to? To whom do they provide those various services? What types of groups do you work with?
        - These interviews show pre and post networks. Identified overloaded nodes.
- Questions and Discussion:
    - Question: How do you separate potential impact of actually conducting a survey, which is always embedded in creating a survey, from the results of the survey? Can you separate independents? Response: Problem is ambiguity of terminology. Have you ever tried to determine the nature of relationships, ie

clarifying terminology from qualitative perspective. Response from Ken Vance-Borland: With my experience as a researcher, evaluator and analyst, I can develop ideas of what is going on in a network. Depend upon participants in the network to determine the nature and meaning of relationships and network. When you ask a participant with whom do you collaborate, you can be more specific. Who do you collaborate with on grant writing, publication, etc. Be careful not to burn respondents out before they have answered all questions. Come back to participants for clarifying what meaning is.

- Question: is the survey really independent of the participants? Response: No. It is an integral part of the process. Relationships exist before they are diagrammed. Not saying diagrams are perfect or objective. They are imperfect and subjective, but they have value as diagnostic tools.
- Question: If you took a before and after shot, is there a way to determine how the survey itself impacted the relationships or network? Response from Chris Ellis: You can display cause and effect between pre and post intervention. There are different ways to display information. There could be one mode or two mode relationships. For example, if person A says they interact with person B but person B says they do not interact with person A, then the relationship exists but it isn't directional. This can be shown on a map through a line. Response from Ken Genskow: Can also determine levels of relationships. Different sociograms can show weak and strong relationships. Response from Chris Ellis: It is also helpful to provide definitions of terms to respondents. For example, it is helpful to define what a strong versus a weak relationship means.
- Question: How do you report on the complexity or intensity of relationships? Is there a tool for this? Response from Ken Genskow: Tools in software calculate this. Diagrams can show breadth visually with thicker bars.
- Question: Can the sociogram depict the value of a network? Is there a goal for sociograms, for example, a perfect sociogram? Response from Chris Ellis: Ideally sociograms demonstrate complete networks. There are no perfect networks. Numerical tools assign cohesiveness of a network. Response from Chris Genskow: Having individuals on the periphery performing outside tasks can be what is most beneficial to an organization. Response from Chris Ellis: Again, it is not always important to have everyone collaborating.
- Question: Can you do this kind of analysis if you want to have an anonymous survey? Response from Ken Genskow: You can have people answer anonymously based on function within the organization rather than specific people. Confidentiality is also an issue. Feasible to have someone else do the assessment in order to ensure anonymity. Response from Chris Ellis: True confidentiality is not a possibility. In order to make information useful, need to know whom the information will be shared with. Employees can be hesitant to speak openly in fear of the information hurting their professional image or relationships.

- Speed Networking Session.
  - Meet two new people. Discuss the following questions for two minutes each.
    - How does SNA fit into your work?
    - What barriers or challenges do you see to using SNA?
  - Ideas discussed:
    - Are network cohesiveness measures standardized?
    - If you want to look at a network within a defined set of innovations, what does this look like in a survey? Is that overwhelming for people?
    - How can you use LinkedIn and other nonpoint source networks to get data? Response from Ken Genskow: It is a challenge to get in depth, quality information without a time consuming survey process. You can utilize records of email and bibliographic studies to assist with this. There is a technology for studying networking sites.

- See value in using social network analysis to make change and as an adaptive tool. Could increase networking between organizations. Recommend making intentions clear before going through the analysis. See SNA as more powerful as an intentional and adaptive tool.
- SNA involves measuring changes in attitudes and knowledge. For example, trying to get people to take the bus rather than drive to work.
- How do you use results and interpret them to effect your program? How do you best reach people?
- Interpretation is a challenge. You can identify whom the key stakeholders are to get messages across.
- SNA is a hypothesis that can be tested.
- If this was depicted as a participatory learning tool, then people would see themselves as working on a gold ribbon activity, rather than as participants. Use this to learn how to collaborate and build network.