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A Case Study: Social Network Analysis of Construction Design Teams

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Abstract : Even though social network analysis (SNA) is an abundantly studied concept for many organizations and industries, a clear SNA approach to the project teams has not yet been adopted by the construction industry. The main challenges for performing SNA in construction and the apparent reason for this gap is the unique and complex structure of each construction project, the comparatively high circulation of project team members/contributing parties and the variety of authentic problems for each project. Additionally, there are stakeholders from a variety of professional backgrounds collaborating in a high-stress environment fueled by time and cost constraints. Within this case study on Project RE, a design & build project performed at the Urban Design Build Studio of Carnegie Mellon University, social network analysis of the project design team will be performed with the main goal of applying social network theory to construction project environments. The research objective is to determine a correlation between the network of how individuals relate to each other on one's perception of their own professional strengths and weaknesses and the communication patterns within the team and the group dynamics. Data is collected through a survey performed over four rounds conducted monthly, detailed follow-up interviews and constant observations to assess the natural alteration in the network with the effect of time. The data collected is processed by the means of network analytics and in the light of the qualitative data collected with observations and individual interviews. This paper presents the full ethnography of this construction design team of fourteen architecture students based on an elaborate social network data analysis over time. This study is expected to be used as an initial step to perform a refined, targeted and large-scale social network data collection in construction projects in order to deduce the impacts of social networks on project performance and suggest better collaboration structures for construction project teams henceforth.

Keywords : construction design teams, construction project management, social network analysis, team collaboration, network analytics
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