

Creative Construction Conference 2016, CCC 2016, 25-28 June 2016

## A network-theory based model for stakeholder analysis in major construction projects

Margaret K.Y. MOK<sup>a,\*</sup>, Geoffrey Qiping SHEN<sup>a</sup>

<sup>a</sup>*Department of Building and Real Estate, The Hong Kong Polytechnic University, Hong Kong, China*

---

### Abstract

The high complexity and uncertainty of major construction projects (MCPs) call for a rigorous approach to manage the relationships and conflicting needs of stakeholders who act a pivotal role in project success. In reality, a project environment can be perceived as network systems composed of interconnected stakeholders, and of interrelated stakeholder issues. The characteristics of and propagating effects produced by these network structures determine the perceptions, salience and impacts of stakeholders. This paper proposes a stakeholder analysis approach based on the network theory to analyze both stakeholders and their interests from a network perspective. It can improve the accuracy, completeness and effectiveness of stakeholder management practice in construction.

© 2016 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Peer-review under responsibility of the organizing committee of the Creative Construction Conference 2016

*Keywords:* Stakeholder analysis; network analysis; network theory; major construction project

---

### 1. Introduction

Managing stakeholder relationships and interests has been increasingly regarded as a critical yet challenging task in the successful delivery of major construction projects (MCPs). MCPs involve numerous stakeholder groups who have discrepant concerns and expectations, and are interrelated by multiple kinds of social interactions in the project. MCP development can readily produce positive and negative impacts to the vested interests of stakeholders; who are making their best endeavor, in different ways, to increase the project team's salience in avoiding their interests from

---

\* Corresponding author. Tel.: +852-3400-8138; fax: +852-2764-5131.

*E-mail address:* [margaret.mok@connect.polyu.hk](mailto:margaret.mok@connect.polyu.hk)

being put in peril [7]. Stakeholders can even be allied to build a stronger resistive force in safeguarding their interests. Ineffectively addressing stakeholder needs often harms the project and leads to failures.

Stakeholder analysis is an essential element of MCP management to understand the stakeholder environment; conventionally, it comprises four main parts: (1) identification of stakeholders and issues; (2) stakeholder classification based on individual attributes; (3) examination of stakeholder relationships, and (4) evaluation of stakeholder influences [9]. Notwithstanding the recent growth of project stakeholder analysis theories and practical approaches, the record of stakeholder management in MCPs has still been criticized as unsatisfactory. There are limitations in the existing stakeholder analysis practice, which have put obstacles on project teams to fully identifying stakeholders and their issues, and accurately evaluating their relationships and impacts [11]. This paper aims to improve stakeholder analysis practice in MCPs by proposing a network-theory based model. The paper firstly reviews the existing stakeholder analysis methods and highlights their weaknesses, a network perspective is then suggested to tackle the problems. Lastly, a network-theory based model for stakeholder analysis in MCPs is proposed, with its process and network measures discussed.

## 2. Stakeholder complexities in MCPs

Stakeholders refer to any groups or individuals “who can influence the project process and/or final results, whose living environments are positively or negatively affected by the project, and who receive associated direct and indirect benefits and/or loss” [5]. In MCPs, the complexity of stakeholders can be analyzed from three aspects: (1) stakeholder issues and their interdependencies, referring to what stakeholders concern about in the project and how these stakes are interrelated; (2) relationships and interactions of stakeholders, referring to the social interactions of these entities; and (3) dynamics of stakeholders and issues, referring to how the stakeholder community and stakeholders’ interests change over time as the project proceeds. This section discusses stakeholder complexities in MCPs in detail.

### 2.1. Stakeholder issues and their interdependencies

The development of MCPs can readily attract and influence the vested interests of various stakeholder groups. Stakeholder issues, being described as the vested interests or concerns of project stakeholders, are often discrepant and dynamic owing to the disparate stakeholder backgrounds in the changing project circumstances. New stakeholders and issues often emerge in response to the changing environment; priorities of issues may also vary among different stakeholder groups. The conflicting stakeholder interests may result in project threats and failures if they are insufficiently accommodated. Comprehensive identification and prioritization of stakeholder interests have attracted attentions in previous studies. Li et al. [5] identified the main stakeholder concerns in the planning and design of large public infrastructure projects and investigated their different priorities among the government, general public, pressure groups and the affected vicinity. Zeng et al. [13] identified the key stakeholder issues in major engineering projects which relate to the fulfillment of project social responsibility. Existing publications have enriched our understanding about stakeholder concerns in MCPs. However, the evaluation and prioritization of issue importance have relied heavily upon the subjective judgment of individual stakeholders; disregarding the actual interdependencies between stakeholder issues and the propagating impacts produced by the issue network. As such, a rigorous method is in need to analyze stakeholder issue interdependencies and assess their impacts on each other.

### 2.2. Relationships and interactions of stakeholders

In MCPs, stakeholders are connected directly or indirectly by many kinds of relationships across functional and organizational borders, so they are embedded in various social networks instead of being isolated in vacuum. Earlier studies paid much attentions on formal relationships of stakeholders; for instance the contractual relationships between project organizations concerning resources sharing and supply of construction services [8], and the hierarchical relationships between intra-organizational project participants. Recent studies shift the focus towards informal relationships of stakeholders, and pay considerable efforts on improving the strategies of relationship

Download English Version:

<https://daneshyari.com/en/article/5029485>

Download Persian Version:

<https://daneshyari.com/article/5029485>

[Daneshyari.com](https://daneshyari.com)