A Framework for Stakeholder Management in Construction Projects

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Abstract: This paper presents a systematic and generic framework reference for the practice of stakeholder management in the construction industry. It contains findings from empirical studies, comprising six interviews, a pilot study, a questionnaire survey in Hong Kong and fifteen interviews in Australia. Six activity groups (i.e. precondition, project data identification, stakeholder estimation, decision making, action and evaluation, and sustainable support) and a total of 18 activities within these groups and their interrelations formulate the main body of the framework. The proposed framework was validated by five real-life projects, the results of which confirm the applicability of the proposed framework. This study serves as a reference for project management teams to systematically manage stakeholders in construction projects.

Keywords: Framework, Stakeholder management, Construction, Empirical studies, Action research.

Introduction
Many scholars have considered stakeholder management to be important in construction in recent years (e.g. Newcombe, 2003; Olander and Landin, 2005; Chinyio and Akintoye, 2008; Yuan et al., 2010), and as a result has become increasingly professionalized. Operational knowledge of the practice of stakeholder management is found in literature, software packages and current practice. Although there has been some success in areas such as the manufacturing industry, the construction industry still has a poor record of stakeholder management during the past decades (Loosemore, 2006). One reason for this, as stated by Karlsen (2002), is the lack of an established systematic framework for project stakeholder management. There are no routine functioning strategies, plans, methods or processes. The result is random stakeholder management.

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Although many initiatives within the stakeholder management community have made significant progress to improve the process, a formal framework has yet to be fully developed for construction projects (Chinyio and Akintoye, 2008). This leads to a research question, which is “what the key components and their interrelationship are in a systematic stakeholder management framework for construction projects”. Previous studies have concentrated on either one stage/issue of stakeholder management, or proposed several stages which are not coherent or not detailed enough in practice. One reason for the lack of an established formal stakeholder management framework could be the multiplicity of tasks and parties involved in a construction project. Such projects are subject to many changes; hence although informal project stakeholder management is inadequate, the task of formalising a framework is difficult to complete.

Project stakeholder management should provide the project team with adequate support for the selection of realistic options in the management of project stakeholders. Therefore, a formal approach needs to be synthesised and developed in order to improve the performance of the stakeholder management process in construction projects.

To address the abovementioned research question, this study presents a framework which offers a systematic and generic reference for stakeholder management in the construction industry. The two main objectives of this research are: (1) to develop a systematic framework for stakeholder management; and (2) to validate and implement the proposed framework in construction projects. These objectives have been achieved through a literature review, interviews, questionnaire surveys, and action research, all targeting construction projects. It should be noted that as the findings in this study are based on a literature review, and empirical studies in Hong Kong and Australia, they may also be considered limited in scope. Nevertheless, the study contributes to the body of knowledge on stakeholder management, especially the framework for stakeholder management, organized as follows:

First, a review of stakeholder management in previous studies is conducted.
Second, the methods for the investigation of the framework for stakeholder management in construction are set out.
Third, the findings from the empirical studies in Hong Kong and Australia are presented.

Fourth, a systematic framework for stakeholder management based on the findings in the empirical studies, is described.

Finally, action research was conducted to illustrate the application of the framework for stakeholder management. The outcomes of the action research are discussed and summarized.

**Literature review**

**The development of stakeholder theory**

The origin of 'stakeholder' in management literature can be traced back to 1963, when the word appeared in an international memorandum at the Stanford Research Institute (Freeman, 1984). Thereafter the concept diversified into four different fields (Elias et al, 2002): corporate planning, systems theory, corporate social responsibility and organisation theory.

The next landmark in the development of stakeholder literature was the publication of Strategic Management: a Stakeholder Approach by Freeman (1984). The term 'stakeholder' is defined as “any group or individual who can affect or is affected by the achievement of the firm’s objectives” (Freeman, 1984). Freeman not only acknowledged the importance of stakeholder management, but also developed a framework. In response to this work, scholars, in general, studied stakeholder theory from three aspects, i.e. the descriptive/empirical aspect (seeking to describe and explain the methods and process in stakeholder management), the instrumental aspect (exploring the impact of stakeholder management on the achievement of corporate performance goals), and the normative aspect (seeking to examine moral and philosophical guidelines for management; these were brought together by Donaldson and Preston in 1995).

Subsequently, two models were proposed, one by Mitchell et al. (1997) and the other by Rowley (1997) based on the concept of the “dynamics of stakeholders”. Mitchell et al. (1997) proposed that classes of stakeholders could be identified by the possession, or the attributed possession, of one or more of three relationship attributes:
power, legitimacy and urgency. By analysing the possession of these three attributes project managers can realise the change of stakeholders’ salience. Instead of analysing stakeholder attributes, Rowley (1997) focused on the “network of stakeholder relationships”. He highlighted that stakeholder relations are not static, they are dynamic and in a constant state of flux. The attitudes and actions of stakeholders may change at different stages. This reflects the dynamic nature of the relationship between stakeholders.

During the last decade more stakeholder theories and empirical studies have emerged. In construction, Bourne (2005) proposed the stakeholder circle methodology; Olander (2006) applied the stakeholder impact matrix in practice; and in 2008, a group of scholars, such as Chinyio, Rowlinson, Akintoye, Skitmore and Walker, presented their findings on stakeholder management in a special issue of ‘Construction Management and Economics’. These specific studies have contributed to the development of stakeholder theory and also formed a theoretical foundation for this research.

**Stakeholder management in construction projects**

A construction project comprises a series of complex activities. Different stakeholders have different levels and types of investments and interests in the project in which they are involved. Engaging stakeholders prior to “the time a decision is reached” is considered crucial for construction projects (Eschenbach and Echenbach, 1996). According to Cleland (1999) and Karlsen (2002), managing multiple stakeholders and maintaining an acceptable balance between their interests is crucial to successful project delivery. Olander and Landin (2005) opined that a negative attitude to a construction project by stakeholders can severely obstruct its implementation. Such obstruction will lead to overruns in time and cost, and poor quality, due to conflicts and controversies concerning the design and implementation of the project. Their study reveals that an evaluation of the demands and influence of the stakeholders should be considered as a necessary and important step in the planning, implementation, and completion of any construction project. Jergeas et al. (2000) also suggested that the purpose of the project needs to be understood, and feedback from stakeholders be solicited in order to achieve alignment between the stakeholders and project team. Many problems can be overcome if the stakeholders are actively
engaged in early planning and integrated into the project team, and if a systematic approach is used to identify and manage stakeholders in the project delivery process (Jergeas et al., 2000). They indicated that this was the only way expectations can be managed, hidden agendas brought to the surface, and project priorities established.

However, according to Rowlinson et al.’s study (2010), “the issue of stakeholders and their management was paid scant regard; the government was used to making decisions on development rather than consulting widely with the major players.” Rowlinson et al. (ibid) further stated that, in the construction industry, stakeholder management and relationship management were still in their infancy. The management of the stakeholders was rather ad hoc, since there are no ‘well-functioning’ strategies, plans, methods or processes. Most recently, Widén et al. (2013) also emphasised that a structured process of stakeholder engagement has to be an integral part of the construction innovation process.

It appears that previous studies either concentrated on one stage of stakeholder management, such as stakeholder identification in Smith and Love (2004), and stakeholder influence analysis in Newcombe (2003), or proposed several stages which are not coherent or not detailed enough to be used in practice. For example, Karlsen (2002) considers “identification of stakeholders” and “analysing the stakeholders” are the first two stages for stakeholder management; however, he ignored the stage of “gathering information about stakeholders”, which is considered important by Young (2006). Therefore strong indications exist to suggest a formal approach should be further synthesised and developed in the interest of both the project and its stakeholders.

This research defines stakeholder management as a process comprising problem solving activities, minimizing project risks, and facilitating projects to move forward in a timely and effective manner.

**Research methods**

This research is conducted in two phases with two objectives.

**Phase 1 - an iterative development and refinement process**
Six semi-structured interviews were conducted in the initial stage of the research, with the aim of identifying stakeholder management practice in Hong Kong. The six experts were selected because they all had more than 10 years’ experience in stakeholder management on construction projects, had different roles in projects (client, consultant and contractor), and were from different types of organizations (government, education and company). A semi-structured approach was adopted in the interviews. Questions used in the interviews included but were not limited to:

- Who are the stakeholders in construction projects?
- Which kind of information do you usually gather about project stakeholders?
- How do you classify stakeholders’ behaviours?
- How do you identify which stakeholders are more important than others?
- Which kind of strategies in practice do you use in dealing with the issues raised by the project stakeholders?
- What factors do you think contribute to the success of stakeholder management?

Content analysis was used for ‘extracting and corroborating meaning from the interviews’ (Chinyio and Akintoye, 2008). An initial list of key issues during the stakeholder management process was synthesized, and the first version of the survey questionnaire was subsequently developed with the aim of further verifying the outcomes from the interviews through a broad survey.

Prior to sending questionnaires, a pilot study was conducted to ensure the suitability and comprehensiveness of the questionnaire. Two project managers, a client representative and a contractor, were asked to complete the preliminary questionnaire. Their suggestions were incorporated into the final version of the questionnaire. The main part of the questionnaire rated the importance of key issues during the stakeholder management process according to a five-point Likert scale (1 = strongly disagree; 2 = disagree; 3 = neutral; 4 = agree; 5 = strongly agree) or a yes/no selection. The full-scale survey was conducted in Hong Kong, and its respondents were project managers selected from internet information, newspapers, magazines, membership
lists of two institutes (i.e. the Association for Project Management Hong Kong, and
the Hong Kong Construction Association), and registered lists (including the
Authorized Architects’ register, the Authorized Engineers’ register, the Authorized
Surveyors’ register, and the General Building Contractors’ register) published by the
Buildings Department of Hong Kong.

A total of 654 copies of the questionnaire were delivered to the potential respondents.
The majority of copies were sent by mail, although for those potential respondents
whose mailing address was unknown copies were sent by email. About three weeks
were given for the respondents to complete and return the questionnaire. The ways for
returning the questionnaire comprised mail, email and fax. A total of 183 completed
questionnaires were received consisting of 81 respondents from client organizations,
45 from contractor companies and 57 from consultant organizations. The response
rate was 28%, which was consistent with ‘the norm of 20–30% with most
questionnaire surveys in the construction industry’ (Akintoye, 2000). The results of
this survey show the importance of key issues during the stakeholder management
process, and the main components in an initial framework for stakeholder
management in construction projects.

The findings from the empirical studies in Hong Kong were validated and revised by
fifteen interviewees in Australia. Australia has mature management in the
construction field and as such was suitable to validate the data collected from Hong
Kong. The Australian construction industry is similar to Hong Kong, but possesses a
different cultural environment. The culture of Hong Kong is oriental, whereas the
dominant culture in Australia is western. This potentially allows the proposed
framework to be used as a general reference for project managers from different
cultural backgrounds. The 15 experts, whose experiences on stakeholder management
ranged from 11 to 20 years, worked for governments, educational organizations,
companies or non-government organizations. They were not only from the
construction industry, but working for general management, community relationships
and business. Stakeholder management in construction projects is closely related to
general management and community engagement. However, differences in these
areas potentially occur principally due to the complexity of construction projects.
Nonetheless, a wider investigation of stakeholder management, which incorporates
the techniques and findings common to non-construction industries, could make a sound basic contribution to the eventual establishment of a systematic framework in construction. The same questions and interviewer, who is familiar both western and eastern cultures, were used during the fifteen interviews as those in Hong Kong, and in addition, outcomes from the empirical studies in Hong Kong were presented to and discussed with the interviewees. It should be noted that due to time constraints, a questionnaire survey was not conducted in Australia. This is a limitation of this study which is described in the conclusion section. Based on the outcomes in the empirical studies in Hong Kong and Australia an initial framework for stakeholder management in construction was developed.

Phase 2 - action research to validate the systematic framework in five real-life projects

The second objective of this research is to validate the proposed framework, and as such the researchers were obligated to test the outcomes in practice and be involved in projects to help project teams manage their stakeholders. Action research, which focuses on research in action rather than research about action (Coughlan and Coghlan, 2002), was chosen as suitable in this phase of the study. Five real case projects are used to this effect. The outcome from this phase is a finalised framework for stakeholder management in construction. The overview of the case projects will be described in the “research finding from action research” section.

Research findings from the iterative development and refinement process

Findings from the empirical studies in Hong Kong

A list of key issues arising during the stakeholder management process was identified through the interviews and questionnaire survey in Hong Kong (Table 1). The relative agreements of the respondents were analysed with the aid of the Statistical Package for Social Sciences (SPSS) computer software by calculating the mean values and conducting factor analysis.

(Insert Table 1 here)
In terms of construction stakeholders and their information, the interviewees identified a number of groups relating to the construction projects. These groups include: clients, contractors, consultants, suppliers, end users, Government, financiers/sponsor, communities, district councils, general public, competitors, utilities, special interest groups and the media. Besides the basic contact information of these stakeholders, the interviewees also collected information on stakeholder interests, needs, and constraints to the project, which are the same as the findings of previous studies, such as Cleland (1999) and Freeman et al. (2007). According to the mean values in Table 1, the respondents agreed that most of the fourteen groups were project stakeholders and all their interests, needs, commitments and constraints should be gathered. The main discrepancy was in the respondent opinions regarded the inclusion of ‘competitors’ and ‘the media’. This is consistent with similar findings in the literature. Donaldson and Preston (1995) and Olander and Landin (2005) present the media as typical positive or negative influencers, but obviously not as stakeholders in the literal sense. However, according to Pinto (1998), a stake can be a moral or legal claim, rather than a literal or practical claim, and it is evident that the media can have a tremendous impact on project activities (Olander, 2007). Similarly, based on a survey in Norway, Karlsen (2002) included ‘competitors’ and ‘the media’ in the stakeholder list as well. The aim of categorising the project stakeholders is to help the project teams identify stakeholders as completely as possible; hence ‘competitors’ and ‘the media’ are included in this research.

In regards to ‘prioritising stakeholders’, three stakeholders’ attributes, i.e. power, urgency and proximity, were considered important by the interviewees. According to the results in Table 1, ‘stakeholder power’, or “the ability to control resources, create dependencies, and support the interests of some organization members or groups over others” (Mitchell et al., 1997), is considered to be the most important. This is in line with many previous studies, such as Winch and Bonke (2002), Newcombe (2003), and Bourne and Walker (2005). Meanwhile, the interviewees also implied that they prioritised stakeholders based both on their intuitive experience and the directives from higher authorities. ‘The directives from higher authorities’ are ranked second for prioritizing stakeholders, possibly because more than half of the respondents (102 of 183) were contractors and consultants, and hence, clients’ instructions were important.
directives. Since the mean values of the four factors are more than three, they are all important for ‘prioritizing stakeholders’.

In terms of stakeholder behaviour, and the strategies employed to deal with stakeholders, the interviewees thought that the behaviour and strategies adopted were dependent on different situations and issues, and these two steps are indispensable. Three types of stakeholder behaviour and four types of strategies were identified by the interviewees:

- **Stakeholder behaviour**
  - Cooperative potential: The behaviours that would help the project achieve its objective on the issue in question;
  - Competitive threat: The behaviours that would prevent or help to prevent the project’s achieving its goal;
  - Opposing position: The behaviour that would be observed when the stakeholders totally disagreed with the project team.

- **Strategies**
  - Holding: either fighting against addressing a stakeholder’s issues or completely withdrawing and ignoring the stakeholder;
  - Defence: doing only the minimum legally required to address a stakeholder’s issues;
  - Compromise: negotiating with stakeholders and trying to reach a mutually acceptable solution;
  - Concession: implementing stakeholder requirements or yielding to stakeholder demands.

86% of respondents agreed with the inclusion of the characteristic, ‘cooperative potential’; while only half, or less than half, of the respondents chose to include ‘competitive threat’ and ‘opposite position’. The implication of this selection percentage implies that the respondents considered most stakeholders to show potential support or acceptance of projects. The positivity of such acceptance encourages the project managers to try for a ‘win-win’ situation, based on cooperation, rather than confrontation. This finding is confirmed in Table 1 by the response to the question regarding strategies since the respondents usually chose compromise or concession to deal with essential stakeholder requirements. Most of the respondents
disagreed with the ‘holding’ strategy, or ‘do nothing and let the situation take care of itself’. This indicates that it is felt that project managers should deal with every issue raised by stakeholders in an appropriate manner.

The interviewees identified fifteen factors in regards to the critical factors for successful stakeholder management (as shown in Table 1). Analysis of the survey response data produced the mean for the 15 factors ranging from 3.80 to 4.43. This indicates that all respondents considered these 15 factors critical for stakeholder management in construction projects. The highest ranking by all respondents was ‘managing stakeholders with social responsibilities (economic, legal, environmental and ethical)’ (mean value = 4.43) which is therefore considered an influential factor to the success of stakeholder management. ‘Exploring stakeholders needs and project constraints’ and ‘communicating with and engaging stakeholders properly and frequently’ (mean value = 4.26) were both ranked as the second most influential factors. The fourth ranked factor was ‘understanding areas of stakeholder interests’ (mean value = 4.22), whereas the fifth ranked factor was ‘identifying stakeholders properly’ (mean value = 4.21), and the sixth factor was ‘keeping and promoting a good relationship with stakeholders’ (mean value = 4.17). These factors were the top six for stakeholder management in Hong Kong construction projects. In addition, it is worth noting that all respondents perceived ‘predicting stakeholder reactions for implementing the strategies’, ‘analysing the change of stakeholder influence and relationships during the project process’ and ‘assessing stakeholder behaviour’ as the least influential factors.

In order to represent relationships among sets of factors, factor analysis was used. According to Pallant (2001), two main issues have to be considered in determining whether a data set is suitable for factor analysis: sample size and the strength of the relationship among the factors. In terms of sample size, Nunnally (1978) recommends a 10 to 1 ratio; that is, “10 cases for each item to be factor analysed”. The minimum number for factor analysis suggested by Pallant (2001) is 150. There were 15 factors in this survey, so according to Nunnally’s recommendation (1978), 150 respondents should be obtained. There were 183 respondents in this study and therefore is above the recommended limit, and adequate for factor analysis. In terms of the strength of relationship among the factors, the Bartlett’s test of Sphericity...
(Bartlett, 1954) and the Kaiser-Meyer-Olkin (KMO) (Kaiser, 1970) were recommended. The Bartlett’s test of Sphericity is significant (p<0.05), and the value of the KMO index is above 0.6, suggesting the data set is suitable for factor analysis. In this survey, Bartlett’s test of Sphericity was significant (p<0.05) and the value of the KMO index was 0.870 (above 0.6). The results of these tests confirmed that the data were appropriate for factor analysis.

A four-component solution was produced based on Varimax rotation of principal component analysis (Table 2). These four factor groupings with Eigenvalues greater than 1.000 explain 61.532% of the variance. Each of the factors belonged to only one grouping, with the value of factor loading exceeding 0.50 (Norusis, 1992; Li et al., 2005; Aksorn and Hadikusumo, 2008). It was noticed that C1 “managing stakeholders with social responsibilities (economic, legal, environmental and ethical)” does not belong to any of the factor groupings. The residual 14 factors can be grouped into four principal components, and the corresponding importance ranking of the extracted components was: (1) stakeholder assessment, (2) stakeholder identification, (3) decision making, and (4) continuous support.

(Insert Table 2 here)

Based on the results of factor analysis, an initial framework for stakeholder management in construction is proposed (Refer to Yang et al., 2009). Although C1 “managing stakeholders with social responsibilities (economic, legal, environmental and ethical)” was not grouped into the four components, it was ranked first among the 15 critical factors for stakeholder management in construction projects. These indicate that it is the priority factor for stakeholder management success. Owing to the significance of this factor, this factor is hence named as the ‘precondition factor’ for stakeholder management; that is, stakeholder management should be conducted with social (economic, legal, environmental and ethical) responsibilities.

Therefore, an initial framework for stakeholder management in construction comprises five components, i.e. precondition factor, stakeholder assessment, stakeholder identification, decision making, and continuous support. Since the factor regarding social responsibilities (C1) is the precondition of any activities for
managing stakeholders, it is placed above the other four groupings. According to general management processes, information should be input first during the process of stakeholder management in order that stakeholders be assessed based on the information obtained. After an accurate stakeholder assessment, further decisions can be made. Continuous support and appropriate communication needs to be conducted during the whole process of stakeholder management, to promote the management process through methods such as monitoring the change of stakeholder influence, and keeping a steady relationship with stakeholders.

Findings from the interviews in Australia

The interview questions used in the fifteen interviews in Australia were synonymous with those in Hong Kong. In addition, outcomes from the empirical studies in Hong Kong were presented to and discussed with the interviewees in Australia. The main comments from the interviewees are summarised as follows:

- Regarding the construction groups, the interviewees considered the categorised stakeholder groups to be systematic, but they queried whether the categories were mutually exclusive, since they observed that one stakeholder may belong to several groups. An obvious example is that ‘government’ could also be a ‘client’. The interviewees thought another way to classify stakeholders was to divide them into ‘internal stakeholders’ and ‘external stakeholders’, which is an arrangement used by Bourne (2005) in the Stakeholder Circle methodology. This classification can solve the ‘overlapping’ problem. However, the main purpose of this list is for use as a reference for the project management team to identify stakeholders not for the means of classification. The purpose of the list was discussed with the interviewees and subsequent approval achieved, with the addition of some suggestions.

- The interviewees also considered ‘government’ to include ‘district councils’, which are called ‘city councils’ in Australia, so the government group can be revised to ‘government (state/federal/local)’. One more group, i.e. ‘environmental groups’, was proposed by the interviewees. Although ‘environmental groups’ can be considered as ‘special interest groups’, at
present, due to the importance of environmental issues, the interviewees preferred to emphasise this group by giving it its own identity.

As such, the finalised list of stakeholder groups in construction is: clients, contractors, consultants, suppliers, end users, government (state/federal/local), financiers/sponsor, communities, environmental groups, general public, competitors, utilities, special interest groups, the media and others. It should be noted that a particular stakeholder could have multiple roles. For example, the government could be an end user, financial sponsor, environmental regulator or utility. Even within one government organization, different branches may fill these different roles and have differing objectives. Due to the uniqueness nature of construction projects, broad terms are used for the stakeholder list. When using this list, industry practitioners should bear in mind a stakeholder may take multiple roles in a project, and this list is suggested as a common reference for project management teams in the construction field. In addition, while this list has been confirmed through a series of interviews, it is not exhaustive of all stakeholders in construction. Thereby, ‘others’ was added to the list for extraordinary cases.

Regarding stakeholder behaviour, the interviewees agreed with the three types, namely cooperative potential, competitive threat, and opposite position. Nevertheless, one interviewee recommended ‘support & receptiveness’ evaluation in the Stakeholder Circle methodology to classify the stakeholder behaviour. According to Bourne (2005), the attitudes of stakeholders can be assessed by the current and target levels of stakeholder interest and support. The level of support has a similar meaning to behaviour types, and therefore can be visualised in the Stakeholder Circle software.

The interviewees agreed with the classification of stakeholder attributes (power, urgency and proximity), and four strategy types (holding, defence, compromise, and concession) necessary to deal with the issues raised by stakeholders.

In terms of the factors contributing to successful stakeholder management and the initial framework, the interviewees made seven suggestions:

- The interviewees thought communicating with and engaging stakeholders were important for stakeholder management and therefore should be included
in the framework. Two interviewees, one from the construction sector and one working on community relationships, suggested that project managers should also decide the level of stakeholder engagement, and match it with the appropriate methods. This suggestion is in line with the finding of a literature review conducted by Reed (2008) which suggested that for best practice in stakeholder participation, “methods should be selected and tailored to […] appropriate level of engagement”. The interviewees also recommended an engagement spectrum, developed by the International Association for Public Participation (IAP2). The engagement spectrum comprises five engagement levels - ‘inform (to provide the stakeholders with balanced and objective information to assist them in understanding the problems, alternatives and/or solutions)’, ‘consult (to obtain stakeholders’ feedback on analysis, alternatives and/or decisions)’, ‘involve (to work directly with the stakeholders throughout the process to ensure that stakeholder concerns and aspirations are consistently understood and considered)’, ‘collaborate (to partner with stakeholders in each aspect of the decision)’, and ‘empower (to place final decision-making in the hands of stakeholders)’ (Victorian Government Department of Sustainability and Environment, 2005). One interviewee from the construction sector had prior experience of this spectrum in his work and confirmed its effectiveness. As the interviewee stated, “this spectrum can be used to ensure a common understanding of stakeholder engagement”.

- The interviewees considered ‘compromising conflicts’ and ‘predicting stakeholder reactions’ are, in fact, implied in ‘formulating appropriate strategies’, hence, these two activities should not be listed in the framework as separate concepts.

- The interviewees considered there should be one more step after ‘decision making’, i.e. ‘action & evaluation’. The corresponding strategies should be implemented, and the management process evaluated. One interviewee stated that ‘it is essential that the project managers monitor and review the stakeholder management activities to ensure objectives and actions are being implemented’. Thus this step is not merely decision-making, but also problem-
solving. The stakeholders should be interviewed or surveyed at a subsequent stage regarding their opinions about the management activities.

- ‘Obtaining support and assistance from the higher authorities’ is considered important by the interviewees, and should be included in the ‘continuous support’ box in the framework for stakeholder management. Similarly, according to Chinyio and Akintoye (2008), practitioners in the United Kingdom hold the same point of view, and they stated that “the ‘top-level support’ was essential for effective stakeholder management”. A similar opinion was expressed by Bourne (2008), who considered ‘centralised support’ as a criterion for evaluating the organisational maturity of stakeholder management. Therefore, this factor should be included in the framework for stakeholder management.

- In regards to the complexity of stakeholder management, the interviewees believed that an approach profile should be established for the project management team’s reference. The profile should not only include the methods for stakeholder engagement, but also those of stakeholder analysis and estimation.

- Regarding the precondition factor, i.e. ‘managing stakeholders with social (economic, legal, environmental and ethical) responsibilities’, in the initial framework, the interviewees confirmed the importance of this factor. Meanwhile, they proposed one more responsibility -cultural responsibility. By this, they mean that cultural diversity needs to be considered as Australia has a large number of immigrants and a highly diverse population. This is a reasonable consideration and should therefore be included. One interviewee explained cultural responsibility by using an urban renewal project as an example. He said that the residents affected by the project were from at least nine non-English speaking countries including but not limited to China, Italy, Turkey, Vietnam, Spain and Arab-speaking countries. It was important that the differences in culture and tradition be fully considered in that project.
because the community involvement or ownership was integral to the success of the project.

- The interviewees thought that although the interaction and dependencies among the activity sets are connected in the initial framework, they are too simple to be used as a reference in practice. A framework for management process should not only define the activities that exist within the process, but also illustrate how and what information needs to flow between activities (Federal Information Processing Standards, 1993). Additional meetings were arranged with four of the fifteen interviewees to discuss the interrelations and outcome flows among the activities for stakeholder management.

All comments from the interviewees were considered in the revision of the initial framework. A revised framework (Figure 1) was presented to the fifteen interviewees at meetings or in emails at a later time with the aim of asking their comments. The interviewees’ replies matched the content of the revised framework, with minor changes to the vocabulary, as such there were no major changes to the substance of the framework. The logical sequence, and information flows in the revised framework were praised by the interviewees. Further explanations regarding the systematic (revised) framework for stakeholder management in construction are explored in the next section.

(Insert Figure 1 here)

The Details of the Systematic Framework

A collection of diverse knowledge areas is described, giving a formalised view of the systematic framework (Figure 1), which consists of a precondition group, four management groups (stakeholder identification, stakeholder assessment, decision making, and action & evaluation), and a continuous support group. For each group a number of activities have been defined in logical sequence. A detailed description of the groups and activities within the systematic framework is provided below. There are also twelve outcomes from each management activates, which link the four management groups as inputs and outputs. As indicated in Figure 1, the outcomes are numbered as follows:
1. Management objectives
2. Stakeholder list
3. Information sheet
4. Priority index
5. Relationship matrix
6. Priority list
7. Attitude classification
8. Stakeholder engagement profile
9. Strategies for further actions
10. Project moving forward
11. Management objective improvement
12. Satisfaction level

It should be noted that, as every construction project is likely to be unique, some of the identified activities can be omitted depending on the characteristics of the project, the stage of the project and the resources in the organisation. In addition, this framework indicates the sequences of stakeholder management, but not those of project management, so it should be implemented continuously at every stage during the overall project process.

**Precondition**

‘Managing stakeholders with economic, legal, ethical, environmental, and cultural responsibilities’ is defined as the precondition for stakeholder management. As indicated in the last section, it is deemed a ‘precondition’ as the core function of stakeholder management is to analyse social responsibilities by delineating the specific groups or persons that the management team should consider in its management activities (Carroll, 1991; Donaldson and Preston, 1995). According to Carroll’s definition (1979) of social responsibility, economic responsibility is the obligation to produce goods and services, sell them at fair prices and make a profit; the legal responsibility refers to the obligation to obey the law; ethical responsibility covers those issues not embodied in law but expected by society. Recently environmental expectations have also been given increased attention by numerous scholars (e.g. AlWaer et al., 2008; Prager and Freese, 2009) because of the expectations for sustainable development. Environmental considerations include air, flora/fauna, dust, water and noise. The purpose is to protect the environment and to provide healthy living conditions. Cultural responsibility is related to the consideration of cultural diversity, especially the differences in language and tradition. Project managers should manage stakeholders by taking into consideration all of these
social responsibilities to ensure the project objectives are achieved. Therefore, this
group is placed at the top of the framework (Figure 1) to remind the project managers
to bear it in mind during the stakeholder management process.

**Stakeholder identification**

The stakeholder identification group in Figure 1 includes management activities for
the identification and collection of information (data) which will be used in the
subsequent management activities. The outputs of this group are: (1) the management
objectives, (2) stakeholder list, and (3) stakeholder information sheet. Three
management activities are included in this group.

Management activity 1 ‘Clearly formulating management objectives’: The
identification of a clear mission for a project at different stages is widely considered
to be essential for the effective management of stakeholders (Winch, 2000). Before
every stakeholder management activity, project management teams should have a
clear understanding of the tasks and objectives at particular stages of the project
lifecycle, including issues such as cost, schedule and budget (Yang et al., 2009). In
order to formulate the management objectives, stakeholder information (interests,
needs, commitments and project constraints) should be considered. If the project has
entered its middle stage, the effects of stakeholder management should be re-
evaluated to ascertain whether the former objectives have been achieved. The re-
evaluation should determine whether a revision and improvement of the current
objectivities has to be considered.

Management activity 2 ‘Identifying a full list of stakeholders’: This serves to answer
the question of “who are stakeholders?” (Frooman, 1999). The project management
team could identify stakeholders either by following the ‘external/internal’ guidelines,
or by their functions such as clients, contractors, and consultants. The identification
should be based on the management objectivities of the project, and the output is a
full stakeholder list.

Management activity 3 ‘Collecting stakeholder information’: Freeman et al. (2007)
believe identifying stakeholder information is an important task for assessing
stakeholders. This information includes stakeholder contact information, their
interests, needs, commitments and constraints to projects. The outcome of this activity is a detailed information sheet regarding the issues of interest to the stakeholders.

Stakeholder assessment

The stakeholder assessment group refers to the analysis and assessment of stakeholders. The baseline of the activities in this group is the information profiles, which are developed during the three management activities in the ‘stakeholder identification’ group. The outputs of this group are a stakeholder priority list, relationship matrix, and attitude classification. This group is broken down into four management activities.

Management activity 4 ‘Assessing stakeholder attributes’: Based on the project objectives, and stakeholder information, stakeholder attributes, namely, power, urgency and proximity, need to be evaluated by the project management team. The concepts of these attributes follow the studies of Mitchell et al. (1997) and Bourne (2005). Power is the ability to “control resources, create dependencies, and support the interests of some organisation members or groups over others”; urgency is “the degree to which stakeholder claims call for immediate attention”; proximity is the distance of stakeholders and the project. The outcome of this activity is a priority index, which is a term used in the Stakeholder Circle methodology (Bourne, 2005).

Management activity 5 ‘Analysing the interrelationships among stakeholders’: This serves to map stakeholder relationships and analyse their coalitions and conflicts. In terms of relationships, according to Cross and Parker (2004), two types of relationships exist among stakeholders: formal relationships and informal relationships. Formal relationships include contracts, and the hierarchy in organisations/projects; informal relationships can refer to many interactions, such as information exchange, help seeking, communication and influence. In addition, stakeholder conflicts and coalitions should be analysed. These concepts are suggested by Freeman’s strategy model (Freeman, 1984). He believes conflict occurs whenever disagreements exist in a social setting; and the groups, who share objectives, stakeholders or interests about the project, are more likely to form coalitions. The coalition matrix can enable project management teams to understand the interest similarity between the stakeholders. Thereby, project teams could engage
stakeholders with similar interests in a consistent way. Analysing the interrelationships among stakeholders is useful in identifying the ‘hidden/invisible stakeholders’ (Bourne and Walker, 2005), and can be used as one method for stakeholder identification, i.e. the second management activity in Figure 1. The relationship matrix/network can also be analysed through ‘Social Network Analysis’, and can help to prioritise stakeholders (Rowley, 1997).

Management activity 6 ‘Prioritizing stakeholders according to their influence’: This activity enables the creation of a finalised priority list of stakeholders by synthesizing the results of ‘priority index’ and ‘relationship matrix’. While the ‘priority index’ is based on the traditional evaluation of stakeholder attributes, the analysis of ‘relationship matrix’ focuses on the relationships between pairs of stakeholders. Therefore, these two outcomes can both be used as references for the project management team. It should be noted that no method for identification and prioritization is perfect and that the use of the results of the ‘priority index’ and ‘relationship matrix’ is deemed to help the project team to see anomalies and make the necessary corrections.

Management activity 7 ‘Assessing stakeholder behaviour’: This serves to analyse the willingness of stakeholders to threaten or cooperate with the project management team (Savage et al., 1991). The stakeholder behaviour can either be classified by the levels of support and receptiveness, or be classified into ‘cooperative potential, competitive threat, and opposite position’. The outcome is a classification of attitudes.

Decision making

Based on the outcomes in ‘stakeholder identification’ (the information profiles), and the outcomes in ‘stakeholder assessment’ (the priority list, the relationship matrix, and the attitude classification), the project management team or decision making group, can assist in deciding the levels and methods of stakeholder engagement, and formulate appropriate strategies to deal with the issues raised by stakeholders at this stage.

Management activity 8 ‘Deciding engagement levels and methods’: Engagement levels include ‘inform (to provide the stakeholders with balanced and objective
information to assist them in understanding the problems, alternatives and/or
solutions’), ‘consult (to obtain stakeholders’ feedback on analysis, alternatives and/or
decisions)’, ‘involve (to work directly with the stakeholders throughout the process to
ensure that stakeholder concerns and aspirations are consistently understood and
considered)’, ‘collaborate (to partner with stakeholders in each aspect of the
decision)’, and ‘empower (to place final decision-making in the hands of
stakeholders)’ (Victorian Government Department of Sustainability and Environment,
2005). The project management team should decide the levels and corresponding
methods for engaging stakeholders according to the project objectives, the stakeholder
information, their priorities and attitudes. The outcome is a profile for stakeholder
engagement.

Management activity 9 ‘Formulating appropriate strategies to deal with the issues
raised by stakeholders’: This serves to decide what strategies the project management
teams use to address stakeholder conflicts with the consideration of their reactions to
the strategies. The strategy types comprise ‘holding, defence, compromise, and
concession’. The choice of strategy types should be made in accordance with the
information profile, the stakeholder’ priority, attitudes and the engagement methods.

**Action & evaluation**

The action and evaluation group is the final management activity group in the process
of stakeholder management. The inputs required are the formulated strategies, and the
profile for stakeholder engagement. This group includes three management activities.

Management activity 10 ‘Implementing the strategies’: This activity is self-
explanatory. The formulated strategies should be implemented accordingly. The
outcome of this activity is to keep the project moving forward.

Management activity 11 ‘Evaluating the effects of stakeholder management’: This
serves to answer the question “have the management objectives been achieved?” This
activity is carried out after the strategies have been implemented, and the results of
the evaluation should be used to improve the objectives in the succeeding process.
Management activity 12 ‘Evaluating stakeholder satisfaction with the engagement activities’: The engagement activities with stakeholders are based on the stakeholder engagement profile. To obtain the stakeholder opinion about the engagement activities, surveys and meetings should be conducted to evaluate the stakeholder satisfaction level. The results can be used in order to better understand the stakeholder interests, needs and project constraints.

Continuous support

Comparing the management activity groups (‘stakeholder identification’, ‘stakeholder assessment’, ‘decision making’, and ‘action & evaluation’) focusing on the steps in the stakeholder management process, this group includes the activities which should be carried out to support the management activities implemented. This group is named as ‘continuous support’ because the activities within not only support a single management process, or contribute to the success of a single project, but can be used for accumulating the experiences and knowledge of the project management team in the long term. Five support activities are included in this group.

‘Communicating with and engaging stakeholders properly and frequently’: Communication is essential for maintaining the support and commitment of all stakeholders (Briner et al., 1996). Effective, regular, and planned engagement with all members of the project community is necessary for project success (Briner et al., 1996). Project managers should be highly skilled negotiators and communicators who are capable of managing individual stakeholder expectations and creating a positive culture change within the overall project (Weaver, 2007).

‘Realizing changes of stakeholder information, influence, relationships and behaviour during the project process’: The concepts of the change and dynamics of stakeholders were acknowledged by Freeman (1984). According to him, in reality, stakeholders, their influence, relationships, and behaviour change over time, and depend on the strategic issue under consideration. Therefore, the processing method should be compared with historical records to indicate the changes.

‘Keeping and promoting an ongoing relationship with stakeholders’: Successful relationships between the project management team and its stakeholders are vital for
successful delivery of projects and meeting stakeholder expectations (Savage et al., 1991; Jergeas et al., 2000). Trust and commitment among stakeholders can be built and maintained by efficient relationship management (Pinto, 1998; Karlsen et al., 2008).

‘Obtaining support and assistance from higher authorities’: As one of the findings from the interviews in Australia, top-level support is important for management activities. In an organisation with a mature stakeholder management environment, the higher authorities always monitor the management process, facilitate problems solving activities and use the effects of stakeholder management as an indicator for performance measurement of the management team.

‘Establishing an approach profile for stakeholder management’: Various approaches for stakeholder management exist both in literature and in practice. A typology of approaches for stakeholder management, and their descriptions, strengths, and considerations should be synthesised as a reference for the project management team.

The systematic framework illustrated in Figure 1 shows the generic activities and their interdependency during the process of stakeholder management in construction. It should be noted that when considering the overall project management process, the activities in the framework should be carried out iteratively, on a multitude of issues, at varying levels of detail. Most stakeholder identification activities are based, to some degree, on historical information, coming from the culmination of the outputs of previous cycles of stakeholder management activities. To validate and test the systematic framework in the field, five real projects are used for action research, and are described in the following section.

Research findings from the action research

Overview of the projects

Five real-life projects were selected for action research:

- The T College project is to construct a new building to provide new classrooms and facilities for the college’s theological school. The project is relatively small with a contract price of AU$2 million.
The CI project is an urban renewal project in a district of M city with a contract price of AU$1 Billion in new investments. The study area for the CI project was approximately 35 hectares, of which Council 1 controlled 12 hectares. The CI project evolved from a government plan, itself the product of five years’ consultation with associated communities, traders, landowners, state government agencies and other stakeholders.

The NSP project is an AU$650 million essential infrastructure project involving the construction of approximately 12.5km of new sewer pipes in the north of the city. The project will increase the sewerage system capacity for the city’s growing northern suburbs and help to protect the two creeks from the damaging impact of sewage overflows that can occur after heavy rain. It will also help to improve the health of waterways flowing into the main river.

The PU project dealt with the new Hong Kong 3+3+4 education reform policy. In order to accommodate the expanding academic structure and increasingly diversified educational training and practice, the University submitted an application for the rezoning of government land, located to the north of the existing main campus to cope with the proposed reform policy.

The ST project is in B University and likewise has to cater for the new 3+3+4 education reform policy in Hong Kong. However, unlike the A University in the PU project, B University is located in the suburb of Hong Kong, where there is much open space. Therefore, although this project is composed of a group of three buildings with a total site area of up to 72,000m², the complexity of this project is relatively low compared to the PU project.

The project characteristics are summarised in Table 3.

As shown in Table 3, the selected projects are drawn from two countries: Australia and Hong Kong, both of which have different cultures. The project types all relate to the construction industry and include a building project, urban renewal project and infrastructure project. Although there are three school building projects, they are either at different locations, or at different phases in the project life cycle. These differences provide interesting comparative material. Medium and high project
complexities make the management of stakeholders more meaningful, as there are relatively complex stakeholder relationships in these projects, and project managers normally have difficulties to manage the complex stakeholder relationships. These projects are mainly analysed from the client and contractor perspectives, as they are key bodies to successful communication with other project stakeholders.

Since the aim of this stage is to validate the proposed framework, the researcher should apply the outcomes in practice and be involved in projects to help project teams manage their stakeholders. The action research, which focuses on research in action, rather than research about action (Coughlan and Coghlan, 2002), is chosen as suitable in this phase of the study. In each project, the activities in the systematic framework were followed, the stakeholders were identified and assessed, and strategies were formed based on the project environment and characteristics. The researcher not only engaged in the management processes, but also stood back from it, summarised the outcomes, and reflected the outcomes to the systematic framework. At the end of stakeholder management process in each project, the project management team were asked to complete a feedback questionnaire for evaluating the usefulness of the framework. Due to limited space, the detailed stakeholder information is not presented in this paper; however, the inter-case analysis regarding the application of the systematic framework is discussed in the next section.

**Inter-case analysis of the systematic framework**

The systematic framework includes six activity groups as shown in Figure 1. The analysis in this section conducted based on these six activity groups.

**Analysis 1 – precondition**

In Figure 1, the precondition group is ‘managing stakeholders with economic, legal, environmental, cultural and ethical responsibilities’. Throughout the five project studies, all of the management teams considered the economic (e.g. cost, job
opportunity), legal (in terms of the governments’ approval), and environmental (e.g. flora/fauna, noise, water quality, and dust) issues. Cultural and ethical responsibilities were selectively taken into consideration, in accordance with the nature of each project. For example, in the CI project, the residents affected by the project were from at least nine non-English speaking countries including, but not limited to, China, Italy, Turkey, Vietnam, Spain and Arab-speaking countries; therefore, the differences in culture and tradition should be fully considered. For example, in the T College project, the stakeholder ‘Family and representatives of the ashes in the landscape’ was an ethical consideration by the project management team. The stakeholder wanted the relatives’ ashes to remain in the college grounds and the original placement to be uninterrupted. In respect of this the project manager decided that instead of moving the ashes, the landscape of the project structure was laid on an alternative place near the ashes.

Analysis 2 – stakeholder identification

The project management teams in the five projects knew their project objectives clearly. Based on their experience or historical records, the teams identified stakeholders and their interests. A new group ‘Leaser’ was proposed by the project manager in the ST project.

A comparison of the five projects showed that, on the one hand, the projects at the design stage, i.e. the CI project and the PU project, focused more on external stakeholders (those who were outside of the performing project’s management and staff structure); on the other hand, the focus of the project management teams, at the construction stage, was on internal stakeholders (e.g. consultants and contractors). This reflects the dynamic nature of stakeholder management in the project life cycle.

The complexity of projects can be identified by the number of differing views of stakeholders. An increase in the number of stakeholder perspectives, increases the project complexity. In the CI project, there were more than 400 stakeholders, who presented numerous interests; but in the ST project, only 12 stakeholders were identified and their views are relatively simple and compatible.

Analysis 3 – stakeholder assessment
The project management teams considered this ‘stakeholder assessment’ group to be most important. This corresponds to the outcomes by factor analysis described in the previous section. Although the teams chose different methods (e.g. Stakeholder Circle software and Social Network Analysis) for the analysis, they all felt this group of steps helped them realise the underlying relationships of the stakeholders. The main considerations for method selection are the project stage and complexity.

An additional stakeholder behaviour was identified by the management team in the PU project: ‘neutral attitude’. Although there were no stakeholders in the five projects who represented a competitive threat, all the management teams agreed to keep this type in the framework in the interest of completeness.

Another aspect raised through the comparison, is that it is relatively easier to satisfy the stakeholders in medium complexity projects; for example, in the T College project, all the stakeholders were satisfied, and in the ST project, most stakeholders were cooperative except those with a neutral attitude. However, in the more complex projects, i.e. the CI project, the NSP project and the PU project, opposite voices or unsatisfied engagement statuses were evident, usually expressed by external stakeholders.

Analysis 4 – decision making
The engagement levels (inform, consult, involve, collaborate, and empower), were seen to increase along with the priority placed on stakeholders’ in the five projects. A wider variety of engagement methods were applied in the highly complex projects.

Regarding the strategy types, (namely - holding, defence, compromise, and concession), as shown in Figure 1, holding was not used in any of the five projects when responding to stakeholder requests. One reason may be that the identified stakeholders were all major stakeholders and the management teams could not ignore their interests. The team members indicated that compromise was the best way to solve problems.

Analysis 5 – action & evaluation
It should be noted that not all the case projects presented implemented the management activities in the actions & evaluation group. The main reason was time limitation: In the NSP project, although the project management team requested the researchers to develop a survey to evaluate stakeholder satisfaction, time did not allow for sending out the survey and collection and analysis of the data; In the CI project, the design stage will continue for another two or three years (as from 2011). To date, within one or two months of the study completion, there has been no response from the stakeholders. In contrast, in the PU project, which the researcher tracked for a further one year, the actions and the stakeholder responses were analysed in detail.

Another reason for the absence of action & evaluation is the stage of the project at the research time. The T College project, NSP project and ST project were in the construction stage, and the works on site were comparatively regular and routine without big issues to solve. However, according to the ninth characteristic of action research proposed by Gummesson (2000), while action research is a ‘live’ case study being written as it unfolds, it can also take the form of a traditional case study written in retrospect, when the written case is used as an intervention into the organisation in the present (Coughlan and Coghlan, 2002). In such a situation the case study performs the function of a ‘learning history’ and is used as an intervention to promote reflection and learning in the organisation (Kleiner and Roth, 1997). The project management teams in this research further confirmed Gummesson’s opinion (2000). They indicated that they learnt how to manage stakeholders systematically during the action research, discovering relevant approaches to stakeholder analysis and engagement, and a propensity to use the proposed framework (Figure 1) as a reference for their following works.

Analysis 6 – continuous support

The issues of continuous support were considered to be important by the management teams during the action research. Increasing the project managers’ knowledge and experience was also raised as an important consideration in contributing to the success of stakeholder management.

Summary of analyses 1 - 6 and the results of the feedback questionnaire survey
The results of the feedback questionnaire survey are shown in Table 4. The results indicate that the five project management teams were satisfied with the framework in general. The management teams have taken on the framework as a systematic reference for future work. The project management teams in the five cases confirmed and highly rated the systematic framework given in Figure 1. They felt the framework systematically illustrated the activities and outcomes during the stakeholder management process. The framework subsequently will provide a reference for them, to enable the efficient conduct of stakeholder management during their daily work.

(Insert Table 4)

The action research confirmed the opinion that the purpose of the framework was as a reference for the project management team. Thus, depending on the characteristics of the project, the stage of the project, and the resources in the organisation, some identified activities can be omitted. For example, the activity ‘formulating appropriate strategies to deal with the issues raised by the stakeholders’ was not implemented during action research due to the lack of special issues raised at that stage. Similarly, the stakeholder categories in Figure 1 are not an exhaustive list of all stakeholders in construction; the categories can be selected and revised depending on the project.

The changes on the systematic framework

Based on the findings of the action research, the systematic framework (Figure 1) was finalised with minor changes:

- the stakeholder type ‘end user’ is specified to include leaser, owner, operator, and facility management;
- one type of stakeholder behaviour, neutral attitude, was added;
- one action in the ‘continuous support’ group was added, that is ‘increasing the project managers’ knowledge and experience on stakeholder management’.

Conclusions

The aim of this paper is to develop a systematic framework for stakeholder management in construction. To achieve this objective, empirical studies, comprising six interviews, a pilot study, and a questionnaire survey in Hong Kong, and fifteen interviews in Australia, were conducted. The comments from the industry
practitioners were synthesized with the outcomes from previous studies, and a systematic framework for stakeholder management in construction projects is proposed. Six activity groups, i.e. precondition, project data identification, stakeholder estimation, decision making, action & evaluation, and sustainable support, formulate the main body of the framework. A total of 18 activities within these groups and their interrelations are illustrated by using different symbols and colours in the framework. Five projects were used to validate the proposed framework. The action research findings reported in this paper confirmed the applicability of the framework.

The significance of the framework is that it serves as a reference for project management teams as a systematic consideration for stakeholder management in construction. In practice, project teams should first get familiar with the framework structure, activity groups, outcomes and interrelationship of each group, as well as the definitions of each term. This can be achieved by reading the explanation information of the framework as indicated in this paper, or engaging a professional consultant to help them understand the underlying concepts of the whole process. The project teams need to be clear about their economic, legal, environmental, cultural and ethical responsibilities as a social entity. Then, they should follow the sequence of the twelve management activities and make sure the corresponding outcomes are produced in each step. Experiences from the action research show that the activities in the framework can be selected depending on the nature of the project and the project management team’s decision. However, the management activities in the ‘stakeholder identification’ group are essential for the inputs of the following steps; thereby, should not be omitted. It is also crucial to develop the ‘priority list’ and ‘attitude classification’, but the stakeholder relationship analysis step in the ‘stakeholder assessment’ group can be optional if the project environment is simple and the management team does not have appropriate knowledge or resources. For projects with high complexity, this step is highly recommended and can be implemented by involving external consultants who know how to decipher complex relationships (for example, consultants with social network analysis skills). The activities in the ‘decision making’ and ‘action & evaluation’ groups produce the main outcomes of stakeholder management process, and push the project to move forward. The management activities in the framework form a loop, which indicates that for best results the activities should be carried out iteratively during the overall project process.
The activities in the ‘continuous support’ group should be initiated at the beginning of stakeholder management process, and encouraged during the whole course. Ideally, construction organisations need to provide stakeholder management support to their project teams by developing stakeholder engagement method profile, maintaining long-term stakeholder relationships, and organising trainings to the core team members.

Limitations of the research are acknowledged as follows:

- Owing to time and resource shortages, the development and refinement of the framework and practical approaches for stakeholder management are based on only twenty-one interviews and a questionnaire survey in Hong Kong and Australia. Since the interviewees and respondents were only from two regions, the findings are limited to Hong Kong and Australian construction projects.
- In order to develop a more generic framework which can be used in both oriental and western culture environments, two locations (Hong Kong and Australia) were chosen for data collection. However, the interpretation of interview questions may be nuances from one culture to another. Although the same researcher, who is familiar with both cultures, was responsible for data collection in the two regions to keep the explanation and data analysis process as consistent and accurate as possible, a potential cultural related risk should still be noted in this research.
- Owing to time limitations, the findings in this research are based on project managers’ experience and did not engage the various construction stakeholders in the empirical studies. Future studies, which incorporate different stakeholders’ perspectives in the framework, should be conducted.
- Time limitations confined the use of the framework in the action research to one example, hence feedback from several attempts could not be obtained and therefore there was no basis on which to build improvements, either for stakeholder management use or to the framework itself.
- Changes in stakeholder influence, relationships and attitudes could not be analysed in the action research due to time limitations, although according to the project management teams’ statements the changes were evident at different stages of the projects. However, the project managers thought the use of this framework provided them with a clear summary of the stakeholder
management tasks and outcomes in their projects and would be suitable for future use.

For actual application, project teams should compare each activity in the proposed framework with the current practices and experiences in the organizations and projects. Although ideally potential users should conduct all activities in the management process, in practice, due to project resources and constrains, practitioners can make decisions on the actual use of the proposed framework.

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