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INCORPORATION OF DIFFERENT AND CHANGING CLIENT INTERESTS IN THE COURSE OF A PROJECT

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There is a widespread assumption that clients' expectations should be accommodated during a building project. However, there may be conflicting expectations within a client organization and these may change over time in the course of a project. Actor-Network Theory (ANT) is used to study the incorporation of client expectations into the on-going development of a building project. To illustrate this, negotiations over a particular decision, namely the location of a building on one university campus was analysed. Negotiations went through a number of stages, involving a master plan architect, members of the public, campus maps and the Vice Chancellor. An ANT analysis helped to trace diverse actors' interests in a series of discussions and how these interests conflict with each other as one option was chosen over another. The analysis revealed new client interests in each negotiation process. Also, the prioritisation of client interests changed over time. The documentation of diverse and dynamic client interests especially contributes to the understanding of how some client interests fail to be incorporated in decision-making processes.

Keywords: actor-network theory, client organization, decision-making process, stakeholders, material objects.

INTRODUCTION

The incorporation of client needs in a construction project has been an important research topic in construction management (CM) literature. Ruddock (2013) raised a difficulty in studying this topic that "*construction clients are multifarious and internally complex*". This paper challenges this difficulty by presuming diverse and dynamic aspects of a client in a project context. A basic assumption of this research is that a construction project is shaped by clients' diverse and changing expectations in the course of a project. The aim of the research is to understand how different and changing client expectations were incorporated during a building project. This paper takes one episode as an example.

LITERATURE REVIEW

The issue of clients' needs has grown in importance in CM literature. The alignment of client needs with contractors' capabilities has often been regarded as a key client strategy (e.g. Chinyio *et al.* 1998). It has come to be recognized that client needs are dynamic and diverse. Thus, some authors have called for broader management methods to manage client needs over time during a project (e.g. Newcombe 2008). Other authors have analysed interactions between a client and a project team as a

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process in which client goals and requirements are incorporated during a project (e.g. Ivory 2004). A few researchers have recently applied actor-network theory (ANT), which provides a useful vehicle to study the incorporation of client expectations and interests across shifting multiple actors' interactions in the course of a project (e.g. Tryggestad *et al.* 2010).

Integration of client needs into contractors' performance

Literature on client strategies in construction projects has often assumed that better client-contractor relationships enhance client satisfaction, based on the assumption that meeting explicit client needs is key to assessing project performance objectives. Briscoe *et al.* (2004) studied client strategies for supply chain integration including the use of communication tools and the selection of procurement route. They identified a specific procurement decision that improved long-term relationships. However, they noted that clients who had clear and explicit needs tended to have more effective long-term relationships. They did not further explore how to clarify client needs.

Some scholars have attempted to align client needs with contractors' performance. More specifically, the selection of contractors' capabilities according to a typology of client needs has been proposed. Chinyio *et al.* (1998) categorized client needs in terms of project performance including safety, quality and time. These values were supposed to guide clients in the selection of appropriate contractors. Similarly, Blismas *et al.* (2004) suggested a typology of clients' multi-project portfolios to investigate the influence of client environment on project delivery. In a typology of clients' portfolios, they suggested that some types of client tended to change their objectives and, thus, called for flexibility during a project. Researchers in this area recognize and identify issues around the diversity and dynamics of client needs in the course of a project. However, they typically do not focus on how to deal with these issues.

Management of dynamic and diverse client needs

A number of authors have looked to process management methods to continuously manage clients' dynamic and diverse goals and needs in the course of a project. In a study of a major redevelopment project, Newcombe (2003) adopted a stakeholder-mapping approach. He analysed the different interests of key project stakeholders, including the general public, the developer and the local authority. Based on his analysis, Newcombe (2003) demonstrated that project managers should pay particular attention to those stakeholders who are likely to enforce their own expectations in an unpredictable manner. The aim of his research was to avoid conflicts and improve project performance, but not to meet dynamic and diverse client needs. In contrast, Green and Simister (1997) used a participative research seminar with the aim of helping a client organization develop shared understandings of a project, especially before the briefing of design specification. They documented the multiplicity of perspectives within the client organization and argued that the social construction of shared understanding among these participants is necessary. Following Green and Simister (1997), we adopt a social constructivist approach to examine the construction of shared meaning among participants who have different perspectives.

Participants' interactions for the incorporation of goals, aims and motives

Connaughton (1993) is one author who has analysed the way a client organization sets different and changing goals or requirements. He analysed pharmaceutical companies' investment decision-making and implementation processes in factory projects. In his analyses of resource allocation and political procedure, he documented the successive

changes in client goals during the projects. Thomson (2011) paid particular attention to emergent client requirements in the course of a project. He analysed information exchange between the client organization and the project team. In his analysis, he observed that multiple requirements arose from different people within the client organization at different times in the course of a project. These two authors investigated the way that a client organization identified different and changing client requirements and goals in a client organization or between a client organization and a project team, in either formal or informal procedure. However, they did not document how participants negotiate with each other to share an understanding of client expectations from different perspectives.

During a construction project, project teams are expected to understand and incorporate dynamic and diverse client needs and goals. However, it has been recognized that a project team has also its own distinct concerns apart from their clients. Ivory (2004) studied client, user and architect's interactions and their implications for design and innovation processes. He documented negotiations over a difference between the architect's strategic motivations beyond the project and client, project-specific goals. He concluded that architects sometimes need to resist clients' conservative views to implement innovation. Ryd (2004) studied the role of design brief documents as carriers of client expectations throughout the brief, design and construction stages in a project. She traced the changing perspectives of a project team on the client's original brief over time, including a project planner and a contractor. She concluded that the briefing document was a decisive interactive element between stakeholders in the course of a project. In this process, the client's needs and requirements were incorporated into the building project through stakeholders' negotiations over a series of produced documents.

Building on Ivory (2004) and Ryd (2004), the assumption of this research is that project participants who have conflicting goals and motivations negotiate with each other to develop a project. The model of this research is that a project develops through a series of negotiations involving a client organization, project team and documents. This general model, in turn, allows for inquiry into how client interests are incorporated in the course of a project. Client interests travel across negotiations between multi-shifting stakeholders and material objects from briefing to design, and to construction delivery process.

Actor-network theory in CM research

During the course of a construction project, changes occur in two key ways. First there are various issues that are subject to negotiations. Second, the people involved in these negotiations are a continuously changing constituency. Recently, in CM research, ANT has been used to study the succession of interactions in a construction project. A particular feature of ANT is that it avoids the dichotomy of identifying internal and external factors of dynamics. Thus, who are the relevant actors and who are not in a particular interaction are not defined *a priori*. Also, ANT does not make *a priori* assumption about actors' properties. For example, material objects are also analysed as participants in interactions. These two points enable researchers to describe associations of multi-shifting stakeholders and material objects by following the passage from one interaction to another.

Harty (2008) used ANT to study the implementation of 3D CAD in a construction project. He observed that circulating objects, such as drawings, travelled within and between networks of actors over time, which gradually incorporated the concerns of

IT support, structural engineers and CAD drafters to develop a layering method. Tryggestad *et al.* (2010) used ANT to study the development of a skyscraper project. They investigated how objects, project stakeholders and the emerging building interacted with each other, which led to the continuous development of project goals and design specifications. They documented a series of interactions where participants' dynamic expectations and ambitions were incorporated into the ongoing development of a project. However, they did not analyse the negotiation processes that led to the project development in detail. Our research builds on Tryggestad *et al.*'s approach that a project develops through a series of interactions between various actors and material objects. In this research, detailed discussions are particularly studied in which actors attempt to incorporate their own goals and motivations into the development of a project. This analysis, is then used, to identify the way that clients' expectations are incorporated in a project.

Theoretical framework

ANT was originally developed as a method to analyse the development of science and technology. The method treats scientific knowledge or technological artefacts as produced through a network of heterogeneous and dynamic actors. (Law1992).

A building project is particularly analysed as being developed through various actors' attempts to incorporate their interests into a project. Actors, including clients, architects and material objects, come together to develop a project. In this process, actors have their own expectations for the development of a project. Actors attempt to align other actors, as well as material objects, so that all of these elements are committed to envisaged pathways to develop a technological artefact. The characteristics and inter-relationships of these elements are defined in a certain way. This attempt to link together different elements and to define their roles and characters is called problematization (Callon 1986).

Actors' goals, motivations and aims which are defined in the alignment with other actors and material objects are called interests (Callon and Law :1982). Actors put forward their problematizations based on their own interests. In problematizations, actors consider their own interests, relevant actors and the relevant actors' interests. Actors' interests are defined in a way that actors in networks interact with each other to select one option from available options for the development of a project. The success of a problematization depends on an actor's ability to convince the relevant actors and on their reactions to the problematization. As a result of negotiations over problematizations, one option for the development of a project is chosen over another. This, in effect, leads to the incorporation of some interests over others.

These concepts – problematization and interest – are used for the case study analysis. My research model is that various stakeholders and documents discuss with each other with their attempt to align actors, their interests and their preferred option for the location of the building. The success or the failure of these attempts during negotiations is the way some client interests are incorporated into a project whereas others are not.

Based on the assumption of ANT that actors' properties are not defined *a priori*, I only analysed actors' interests during a negotiation at a particular moment of a project. More specifically, client expectations were identified in relation to a decision about a specific issue, to various relevant actors and to material objects around this issue. The limitation of this approach is that the analysis does not emphasize stable goals which

are set by powerful actors. Instead, this approach highlights dynamic client interests which are adapted to a project context in a series of negotiations.

RESEARCH DESIGN

The Marvin building in the Colmer University in South England was studied. This building was designed to house facilities for the School of Film and Drama (SFD). (The names have been anonymized to maintain confidentiality.) As such it required special facilities including a theatre, film and TV production facilities. The feasibility study for the building project took place in 2007 and the construction was completed in 2011. The final project cost was about £11 million.

The research was carried out by the first author of the paper and first-person narrative is used to present her account of the work. Data was collected from retrospective interviews with 13 project participants and from documents produced during the project. The duration of each interview was approximately 90 minutes. The interviewees were from both the client organization (including the representatives of SFD and the Deputy-Vice Chancellor), and the project team (including architects). The interviews started with the participants from the client organization, and proceeded with further relevant participants identified from the interviews. From these, I identified discussions and negotiations that were most remembered as controversial. Also, I used the documents to understand the sequence of events, to supplement the data, and to support my arguments in the analysis. The documents include architectural drawings, proposals, review notes and emails.

ANT was used as analytical method to systematically document the discussions over key issues. For the purposes of this paper, one particular episode has been selected from the case study of the whole project. Research questions for the issue about the location of the Marvin building are:

- What were actors' interests identified in a specific problematization with regards to the location of the building?
- How were actors' interests incorporated during discussions as one option was chosen over another for the location of the building?
- Why were some client interests incorporated while others were not in each negotiation?

ANALYSIS AND FINDINGS

Three key discussions were identified around the decision over the location of the building. First, the Head of Space Management (HoSM) and a master plan architect proposed potential building sites and recommended one of them. Second, members of the public opposed this proposal during the exhibition of a draft campus master plan. Third, the final decision on the location of the building was made by the Board of the Governance (BG), which overruled the Dean of Faculty's opinion.

Discussion 1: Proposal for the location of the building

Colmer University had developed its Estate Strategy (2004-2013) to promote more efficient use of the spaces owned by the University. In the Estate Strategy, several strategic estate objectives were set out. One of them was to establish zones on the University's main campus so that cognate activities would be co-located. A campus master plan was developed to implement the Estate Strategy. At that time, the SFD was located on another campus which was planned to be closed by 2012. A new building for SFD was one of the University projects envisaged for the next five years.

At the feasibility meeting for the new SFD building in July 2007, the location of the building was discussed. The feasibility group members requested the HoSM to appraise options for possible locations. The HoSM considered the East and West of the Purbeck building as most appropriate sites. She raised one of the requirements for this proposal as to be near to the School of Communication. She employed the Estate Strategy to support this proposal, which encouraged academic integration between schools and departments whose academic activities are related to each other. In relation to the options of the sites next to the Purbeck building, she aligned the Purbeck building with the SFD building as well as the University's interest in her problematization. HoSM's problematization identified the University's interest in academic integration between schools and departments.

The HoSM asked a master plan architect to comment on the advantages and disadvantages of the sites at the East and West of the Purbeck building. The master plan architect recommended the East of the Purbeck building in preference to the West. In his report, he pointed out that the West site was highly visible to visitors from outside the campus. This site faced the main entrance of the University. He identified the University stakeholders' interest in accessibility for visitors to the SFD building as the building was supposed to accommodate the public theatre space. However, this site was next to an existing listed building; the architect noted that the proposed building might introduce a visual contention between the two buildings. In relation to the option of the West site, he aligned the entrance, visitors, the existing listed building and the University's interest in the accessibility of the building in his problematization. In contrast, he defined the East of the Purbeck building as the site providing an opportunity to create two separated quadrangles in a central space of the campus. The architect's interest was in using this building to provide a vibrant atmosphere by dividing an open space at the centre of the campus. However, the building on this site would not be visible from outside of the campus. In relation to the East option, the architect aligned the central space, visitors from the outside and his own interest in the improvement of the centre of the campus in his problematization.

In his recommendation at the end of the report, the architect wrote "*[i]ts location will therefore be influenced by whether the University wishes to encourage visitors into the heart of the campus, or whether it would prefer to maintain a degree of separation by locating it at the periphery of the built core.*" This quote points to the architect's strategy to convince the University. He stated that the University could change its interest in the accessibility from the outside campus to the interest in drawing visitors into the centre of the campus. In his problematization, he redefined the University's interest so that the East option was chosen while incorporating both the architect's interest in providing vibrant atmosphere at the centre of the campus and the University's redefined interests. As a result, this proposal was agreed by the HoSM and the feasibility group members.

Discussion 2: Public consultation

In parallel with the feasibility study of the SFD building project, the campus master plan consultation team developed a draft master plan in October 2007. This draft master plan was agreed internally by the University senior people. Following this, Colmer University held a public consultation in order to obtain the views of the public, including local residents, University students and staff. The public consultation took the form of a six-week exhibition, in which the members of the public were invited to view the campus master plan. In the exhibition venue, the campus master

plan was presented on 12 presentation boards. The background and purpose of the master plan and the current problems of the campus such as vehicular routes and building condition were demonstrated. At the end of the presentation boards, 13 key themes of the improvement plan were identified and proposed.

The SFD building project was one of these key themes; it was indicated on two campus maps on the presentation boards. In both of the maps, the location of the building was positioned on the East site, which was in the middle of an open central space. The plans for all the future projects were communicated equally without a detailed description of each project. The architects' problematization for this public consultation was that the University was interested in showing the local authority that public views were being taken on board in the development of a campus master plan. The University did not have an interest in taking into account their comments on the detailed plan for each project. Thus, the presentation boards did not communicate the potential function of the SFD building; they did not communicate that the building would accommodate the public theatre space or common teaching space shared by schools and departments. The architects created the presentation boards in the alignment with the University's interest and the local authority in their problematization, thus presented only the location of future projects without the description of each project.

In the exhibition, respondents were given forms asking their attitudes or views on the 13 themes. Among the 13 key themes, two themes were especially related to the location of the SFD building: Theme 4 "*to reinforce the square at the centre of the campus*" and Theme 7 "*to provide a new School of Film and Drama building*". In the comments collected after the public consultation, the majority of the responses opposed the loss of the green space caused by the erection of the new SFD building. Comments included statements such as "*will have serious negative impacts on our ability to recruit students if green space is removed*", "*very obtrusive location – cutting in half one of the few well planned open spaces on campus*", "*should not be built here under any circumstances*." In sum, the majority of the respondents did not agree with the University's East option. In relation to this option, the public aligned the green space, the SFD building and their interest in maintaining the openness and brightness of the green space in their problematization.

Other collected comments showed the public's agreement on the proposal under certain conditions. There was a suggestion of downsizing the building so that the open space was not shaded by the building too much. Also, a few comments agreed that the location was appropriate if the building was to be shared among schools and departments. They redefined the SFD building as a small building or accommodating shared facilities to align the SFD building with the East option based on their interests. The lack of the information about the building itself may be a part of the reason why the majority of the public paid particular attention to the green space and opposed the East site. This implies that the way the University's interest outside the project attracted the public's particular interest was through the medium of the campus maps. In the architects' problematization, the design of the campus maps was aligned with the University's concern about the local authority's attention to the development of the master plan. In the public's problematization, the public's interest in the openness of the green space was aligned with the option of the East site based on the campus maps, which were created in a way that the University's concern was privileged.

Discussion 3: Final decision of the location of the building

After the public consultation, the architects reconsidered the proposed location of the building. The architects first reconsidered the size of the building based on some comments. They considered that the centre of the campus was still an appropriate location if the building was smaller. In this problematization, they aligned the University's interest in the visitors' easy access to the building with the East site. Also, the architects proposed building on a car park as an alternative site for the smaller building, which was away from the green space but close to Purbeck building. In this problematization, they aligned the public's interest in maintaining the openness of the green space with an option for building on the car park, while moderating their own interest in reinforcing the centre of the campus.

The two potential building sites for the SFD building were considered as options by the Board of Governance (BG). According to the interview, the finance officer stated that it was informally the Vice Chancellor's very strong view that led to the final decision, though it was formally the BG's decision. The finance officer was not personally interested in the location of the building, and said that the majority of the members in the BG were not interested in this issue. The finance officer explained; "*Well, he is the chief executive of the organization..., so not altogether surprisingly people would listen to what he says*" (Interview with the finance officer 2013). This implies that the BG members aligned three aspects in their problematization: the Vice Chancellor's preference, their own interest in following his hierarchically higher position and their absence of interest in the location of the building.

The Deputy Vice Chancellor also stated that the Vice Chancellor made the final decision. He did not know exactly why the Vice Chancellor preferred this location. In fact, he was personally in favour of the centre of the campus due to his interest in the visibility of the building. However, he recognized that this location "*might have proved unpopular with colleagues*" (Interview with Deputy Vice Chancellor 2013). This implies that the Deputy Vice Chancellor moderated his interest in the visibility of the building as he aligned the public's interest in the green space with an option for the building on the car park in his problematization.

At the feasibility meeting in March 2008, the feasibility group heard that the location of this building would be the car park. The final decision on the location was communicated as the united decision of the BG by the Deputy Vice Chancellor, the chairman at the feasibility meeting. In the feasibility meeting, the SFD was not very interested in the location of the building, but understood that this decision was made as the Vice Chancellor wanted to maintain the openness of the green space. The HoSM mentioned that, at the meeting, there was a discussion about the benefit for the University as a whole and said, "*that was a real nervousness about making that central key green space feel more enclosed*" (Interview with HoSM in 2013).

In this feasibility meeting, there was opposition to the option of using the car park by the Dean of the Faculty. She preferred the East site. In relation to this site, she aligned the Purbeck building with the SFD building and identified her interest in maximizing academic integration between the schools in the same Faculty in her problematization. The, the feasibility group members aligned the following aspects in their problematization: the Vice Chancellor's preference for using the car park, the public's interest in the openness of the central space, the Dean's interest in academic integration in relation to the option of the East site. As a result, they chose the car park space as the location of the building instead of the East site. To choose the car park

space instead of the East site as the location of the building, they prioritized the Vice Chancellor's preference and the public's interest over the Dean of the Faculty's interest in academic integration. Interestingly, the University's interest in academic integration was incorporated in the first proposal but not in the final decision. As the alignment of actors, interests and options changed, the prioritization of client interests also changed.

DISCUSSION AND CONCLUSIONS

In a series of discussions over the location of the building, some client interests were incorporated while others were not. This was because client interests were newly identified as new actors, interests and options were introduced in each negotiation and that these diverse interests conflicted with each other to choose one option over another for the location of the building.

In the initial proposal, the architect redefined the University's interest in order to recommend the East site over the West site. As the architect recognized that the University was interested in the accessibility of the building for visitors, the architect redefined that the University was interested in drawing visitors to the centre of the campus so that it was aligned with the option of the East site. As the East site was chosen over the West site, the architect's interest in providing vibrant atmosphere at the centre of the campus and the University's interest in drawing visitors into the centre of the campus were incorporated. However, the University's interest in the building's accessibility for visitors from outside of the campus was not incorporated.

In the public consultation, the campus maps were designed based on the University's interest outside of the project, which, in effect, introduced the public's interest. The architects designed the presentation board in a way that they incorporated the University's interest in convincing the local authority about the democratic process of developing the campus master plan. The presentation based on this interest attracted the members of the public's interest in the openness of the green space as they opposed the East site as the location of the building. The University's interest outside of the location of the building unexpectedly introduced new interests into the discussion as the members of public provided comments based on the campus maps in the exhibition.

In the final decision on the location of the building, the Vice Chancellor's preference communicated by the Deputy Vice Chancellor was prioritized over the Dean's interest. In the feasibility group meeting, the members aligned the Vice Chancellor's preference for using the car park space, the public's interest in the central open space as well as the Dean of Faculty's interest in academic integration in relation to the options of the car park space and the East site. In the end, the car park space was chosen as the building site, and thus, the public's interest in the openness of the central space was incorporated, whereas the Dean's interest in academic integration was not incorporated. Although the University's interest in academic integration was incorporated in the first proposal, the same interest was not incorporated in the final decision. In a series of discussions, the previously incorporated interest was dropped in the alignment with a new actor, a new interest and a new option.

In this research, the diversity and dynamics of client interests have been analysed in a series of negotiations. Changes in the prioritization of client interests were observed as the choice of options was iteratively considered. ANT approach especially helps to understand the process of how some client interests fail to be incorporated by taking into account unexpected actors' influence on decision-making processes. This

research contributes to a nuanced understanding of client decision-making processes in building projects as called for by CIB W-118. It provides deeper insights than the more conventional approach, such as the study of roles and responsibilities or processes and mechanisms. The analysis of particular actors' roles does not capture the way unexpected actors (e.g. campus maps) influence clients' decisions. Also, the adoption of linear management process hardly captures how some client interests eventually fail to be incorporated in a series of discussions.

REFERENCES

- Blismas, N, Sher, W, Thorpe, A and Baldwin, A N (2004) A typology for clients' multi-project environments. *"Construction Management and Economics"*, **22**(4), 357-71.
- Briscoe, G, Dainty, A, Millett, S and Neale, R (2004) Client-led strategies for construction supply chain improvement. *"Construction Management and Economics"*, **22**, 193-201.
- Callon, M (1986) Some elements of a sociology of translation: Domestication of the scallops and the fishermen of St. brieuc bay, In: Law J (Eds.), *"Power, action and belief: A new sociology of knowledge"*. London: Routledge & Kegan Paul.
- Callon, M and Law, J (1982) On interests and their transformation: Enrolment and counter-enrolment. *"Social Studies of Science"*, **12**(4), 615-25.
- Chinyio, E, Olomolaiye, P, Kometa, S and Harris, F (1998) A needs-based methodology for classifying construction clients and selecting contractors. *"Construction Management and Economics"*, **16**, 91-8.
- Connaughton, J N (1993) *"Making and implementing industrial building investment decisions"*, Unpublished PhD thesis, University of Greenwich.
- Green, S and Simister, S (1999) Modelling client business processes as an aid to strategic briefing. *"Construction Management and Economics"*, **17**, 63-76.
- Harty, C (2008) Implementing innovation in construction: Contexts, relative boundedness and actor-network theory. *"Construction Management and Economics"*, **26**(10), 1029-41.
- Ivory, C (2004) Client, user and architect interactions in construction: Implications for analysing innovative outcomes from user-producer interactions in projects. *"Technology Analysis & Strategic Management"*, **16**, 495-508.
- Law, J (1992) Notes on the theory of the actor-network: Ordering, strategy and heterogeneity. *"Systems Practice"*, **5**, 379-93.
- Newcombe, R (2003) From client to project stakeholders: A stakeholder mapping approach. *"Construction Management and Economics"*, **21**, 841-8.
- Ruddock, S (ed) (2013) Clients and users in construction: research roadmap summary. CIB Publication; No. 374. CIB, Rotterdam. CIB W-118.
- Ryd, N (2004) The design brief as carrier of client information during the construction process. *"Design Studies"*, **25**, 231-249.
- Thomson, D (2011) A pilot study of client complexity, emergent requirements and stakeholder perceptions of project success. *"Construction Management and Economics"*, **29**, 69-82.
- Tryggestad, K, Georg, S and Hernes, T (2010) Constructing buildings and design ambitions. *"Construction Management and Economics"*, **28**, 695-705.