A System of Classification of Temporary Multi-Organizations in the Building Sector

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Abstract

Various systems of classification, based on metaphors, structures, typologies, etc., have been proposed to explain the functioning and structuring of individual organizations. These systems of classification are often used in the building sector to represent the patterns of conduct and operation of organizations. However, they do not fully contribute to represent the complexity of the building industry in which projects are conducted by temporary multi-organizations (TMO). Instead, TMOs in the building industry are mainly classified and studied according to contractual agreements – so called procurement strategies. Procurement strategies establish formal links between actors of the TMO. Nevertheless, in reality, formal and informal communications, authority and procedures do not necessarily follow the expected routes of the legally-bound procurement strategy. Therefore, the formally-established organizational structure only represents part of the relationships and functioning of the TMOs.

This article reports the preliminary results of an ongoing research project that examines the structure and functioning of TMOs according to the real relationships of communication, authority and procedures that link project actors. The study proposes the following questions: What are the differences between the formal structure of the procurement strategy of a project, and the real relationships of formal and informal communication, authority and procedures that exist between the members of the TMO? And, How can these differences be represented? The article is based on a survey of nine case studies of construction projects conducted in Quebec, Canada and the further detailed analysis of the TMO created by three construction clients. Research results include the identification of nine possible configurations of TMOs.

Keywords: temporary multi-organization, project team, construction, communication, procurement
1. Introduction

Previous research has examined the main challenges of communication between the multiple participants of the temporary multi-organisations (TMO) that are created by clients to initiate, manage and execute construction projects. The interface between the client and the principal actors of the TMO is often the focus of analysis; particularly (i) the fragile relation that often exists between the client and the professionals and constructors of the building industry (Cherns and Bryant, 1984), and (ii) the effects of informal communication and decision-making (Dainty, Moore, and Murray, 2006; Latham, 1994). It has also been found that the procurement strategy does not reflect the real relationships that exist between all the members of the TMO, particularly those conducted through informal communication (David and Alan, 2008; Emmitt and Gorse, 2007). However, there is still insufficient knowledge about the consequences of informal communication and procedures on the structuring of the TMO.

This ongoing research project aims at bridging this gap by understanding how informal communication and procedures influence the structure of the TMO. Inspired by the work of H. Minztberg (notably “The structuring of organisations”, 1979) this study seeks at identifying patterns of influence (or contingency factors) that permit to generate a system of classification of TMOs, one that takes into account all the real (formal and informal) relationships between project actors. It examines the literature taking into account different levels and areas of analysis: typologies, metaphors, taxonomies and archetypes. The advantages and disadvantages of the existing systems for the study of TMOs are then identified. The research methods are further explained and finally, the preliminary research results are presented in a graphic manner explaining a preliminary system of classification that is deduced from the analysis.

2. Systems of classification used in the building sector

An organization is a set of connected interests involving people, resources and channels of communication, and established in such a way as to ‘be recognizable as an entity’ (Stringer, 1967, p.107). According to Stringer (1967) an organization often has the following characteristics: (i) it has a set of goals ultimately applicable to all its parts; (ii) it establishes means for pursuing these goals; (iii) it has an ultimate expression of the organization's authority; and (iv) it has a permanence which transcends particular tasks. The classification of organizations has been much useful in both management and the construction sector. Classifications identify patterns of conduct, which permit to anticipate, plan and analyse behaviours, procedures and responses. (Green 1996) Organizations, for instance have been classified by structural configurations (Mintzberg, 1979) by metaphors (Morgan 1986) and by their internal structure (PMI, 2008). In construction, where project clients have a relevant role in determining the structure of the TMO, they are classified by origin, by profile and by level of experience. (Walker, 2007; Masterman, 2002; Nahapiet and Nahapiet, 1985)

The existence of multiple systems of classification is not really surprising. According to Miller (1990, p.771) ‘variety and cohesion of configurations are caused by the interdependent, robust, cyclical and
reciprocal relationships among their parts [configurations] demonstrate integral alignments among elements of structure, strategy, process and environment”. This implies that organizations respond to systemic factors (Checkland, 1981; Churchmann, 1974; Le Moigne, 1984) to produce multiple responses to the system and its environment. We explain below the most relevant systems of classification used in the building sector.

**Taxonomy, “Classifying classifications”:** Green (1996) proposes a taxonomy that permits to categorize the systems of classification according to four approaches: (i) client types; (ii) social complexity of client organizations; (iii) naturalistic inquiry and (iv) organizational metaphors. Table 1 shows this taxonomy, the factors used to identify categories and the focus of each system. The taxonomy is complemented by Mintzberg’s typologies and the procurement classification system (both shown separately).

**Table 1: Client Organizational Classification and Taxonomies (adapted from Green, 1996).**

<table>
<thead>
<tr>
<th>Classification</th>
<th>Main Authors</th>
<th>Factors</th>
<th>Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Typologies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mintzberg (1979)</td>
<td>Contingency</td>
<td>Internal Structures</td>
</tr>
<tr>
<td></td>
<td>PMI (1996)</td>
<td>Process, function</td>
<td>Internal structure</td>
</tr>
<tr>
<td>Client types</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Higgins and Jessop (1965)</td>
<td>Previous experience</td>
<td>“Sophisticated” and “Naïve”</td>
</tr>
<tr>
<td></td>
<td>Nahapiet and Nahapiet (1985)</td>
<td></td>
<td>“Primary” and “Secondary”</td>
</tr>
<tr>
<td></td>
<td>Hillebrandt (1984)</td>
<td></td>
<td>“Continuing” and “One-off”; private and public sector</td>
</tr>
<tr>
<td></td>
<td>Rougivie (1987)</td>
<td>Sector</td>
<td>“Public”, “Individuals” or “Corporations”</td>
</tr>
<tr>
<td></td>
<td>Kelly et al. (1992)</td>
<td>Size Parameters</td>
<td>“Size”: small or large; “Sector”: public or private</td>
</tr>
<tr>
<td></td>
<td>Masterman and Gameson (1994)</td>
<td>Type of project</td>
<td>“Experienced” and “inexperienced”</td>
</tr>
<tr>
<td>Procurement systems</td>
<td>Masterman (2002)</td>
<td>Legal frame</td>
<td>Contractual arrangements and strategies</td>
</tr>
<tr>
<td>Social complexity of client organizations</td>
<td>Cherm and Bryant (1984)</td>
<td>Multi-faceted</td>
<td>Interest groups, divergent objectives, conflicting priorities</td>
</tr>
<tr>
<td></td>
<td>Morris and Hough (1987)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Naturalistic inquiry</td>
<td>Checkland (1989)</td>
<td>Management and social sciences</td>
<td>“Myths” and “Meanings” for “Sense making”</td>
</tr>
<tr>
<td></td>
<td>Burrell and Morgan (1979)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lincoln and Guba (1985)</td>
<td>Research paradigm</td>
<td>“Phenomenological”, ”interpretative” or ”naturalistic”</td>
</tr>
<tr>
<td></td>
<td>Reason and Rowan (1981)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Robson (1993)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metaphors</td>
<td>Morgan (1986)</td>
<td></td>
<td>Organizational behavior</td>
</tr>
</tbody>
</table>

*In grey the organisational archetype of the construction industry: the procurement systems.*

**Typologies, classifying internal structures:** Mintzberg’s typology (1979, 1983a, 1983b) and the typology of structures proposed by the PMBoK (PMI, 2008) are central to the understanding of the internal structures of the organizations that constitute the TMO. Contrary to the typology proposed by the PMI, Mintzberg acknowledges that the organisation is not only understood in terms of its formal structure and functional division, but on actual formal and informal communication units and
channels. Mintzberg identifies work constellations and coordination mechanisms to describe the informal internal workings of the organization and he identifies the forces and forms that explain how multiple internal aspects can affect other organizations in inter-firm relations (Mintzberg, 1990; 1982). It can therefore be expected that internal forces play an important role in the structuring of the TMO and the project overall process.

**Client types, classifying the project initiator:** Green (1996) stresses the fact that “construction professionals are all too often guilty of taking an over simplistic view of their clients”. In fact, most authors wrongly assume that client organizations are “unitary entities whose objectives are pre-determined and consistent over time”. (op.cit., p.155) In response to this, different types of building clients have been identified (Green, 1996). The recognition of client types represents a starting point in the analysis of TMOs, particularly because clients condition the whole project process as they initiate and lead the procurement strategy.

**Procurement, classifying contractual arrangements:** In the construction sector, the structures of TMOs have traditionally been studied from the perspective of contractual arrangements between organizations (or procurement strategies). Procurement strategies are often divided into three types along with few subgroups: (i) *Separated and cooperative*, (ii) *Integrated* (including “Design-build”, “Novation” and various forms of “Build-own-operate”) and (iii) *Management-related* (Including “Construction management” and “Project management”). (Masterman, 2002; Walker and Hampson, 2003; Mohsini and Davidson, 1991) Due to its widespread use in construction, the procurement classification has now become an “organizational archetype”, namely “a set of structures and systems that reflect a single interpretative scheme. (Greenwood and Hinings, 1993, p. 1052) Greenwood and Hinings (2006) further explain: “Archetypes are similar to configurations except that they emphasize the importance of achieving institutional legitimacy.” (p.827)

**Social complexity and naturalistic inquiry, the dynamic character of organizations:** Client organizations are complex “social systems” (Green, 1996); they are in fact the result of “collective action constructs”. (Crozier and Friedberg, 1977; Stringer, 1967) However, rather than being static, social constructs are in continual re-negotiation as different realities are repeatedly re-formulated by actors. (Green, 1996) Authors that explore naturalistic inquiry remind us that it is important to understand clients - and other organizations - not only as typified entities (having fixed characteristics) but to “understand the ways in which the client makes sense of his own organization”. (Green, 1996, p.157) For the TMO, it is also crucial to take into account how other organizational actors perceive each other, rather than reducing the perception of the TMO to a fixed assembly of individual parts.

**Organizational metaphors, classifying behaviours:** Metaphors have been used in different ways to explain the behaviour of organizations. (Inns, 2002) Metaphors do not attempt to explain what an organization is (a typology), but rather how it behaves as a dynamic network of actors. According to Miler (1996, p. 159), “the importance of Morgan’s contribution is that it moves the debate from asking which organizational theory is more ‘correct’ towards which theory provides the more useful insight in a given situation”. However, there is much debate about the pertinence of metaphors for the study of organizations. (Pinder and Bourgeois, 1982; Tinker, 1986; Lackoff and Turner, 1989; Reed,
Chia (1996) proposes to change the focus from metaphors towards a process of *metaphorization*, that is “the critical task of systematically re-examining hitherto taken-for-granted concepts and categories and revealing the hidden tensions and contradictions inherent in every literal attempt to adequately represent reality” (op.cit., p.140), an approach also defended by Weick (1998) and Cornelissen (2005). Table 2 summarizes Morgan’s (1986) classification based on metaphors and illustrates how they apply to organizational entities and processes in the construction industry. The table serves to explain that a construction project is, in reality, a complex assemblage of multiple metaphors (see the right column). Therefore, even though metaphors provide an insightful and reliable set of indicators on the nature of the composition of the TMO, it is difficult to rely on this classification alone to describe the TMO as a whole.

**Table 2: Organizational Metaphor (adapted from Green, 1996)**

<table>
<thead>
<tr>
<th>Metaphor</th>
<th>Highlights</th>
<th>Main authors</th>
<th>Construction entities and processes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Organism</td>
<td>Biological systems</td>
<td>Attributes, structures, and development of organization coping with their environments: evolutionary patterns in the interorganizational ecology</td>
<td>General Systems Theory: von Bertalanffy (1968), Burns and Stalker (1961), Lawrence and Lorsch (1967), Woodward (1965), LeMoigne (1984)</td>
</tr>
<tr>
<td>4 Culture</td>
<td>Sociological and psychological characteristics</td>
<td>Shared values and belief, Cooperation</td>
<td>Peters and Waterman (1982); Wilkins and Ouchi (1983)</td>
</tr>
<tr>
<td>5 Political</td>
<td>Power and conflict, cooperation mechanisms and power plays between people in organization</td>
<td>Pettigrew (1973), Pfeffer (1981)</td>
<td></td>
</tr>
<tr>
<td>6 Psychic prison</td>
<td>Entrapment in prescribed norms.</td>
<td>Janis (1972)</td>
<td>Procurement strategy, contracts, formal structure. Laws, codes, regulations, norms, etc.</td>
</tr>
<tr>
<td>8 Domination</td>
<td>Brainwashing</td>
<td>Exploitation mechanisms and power plays between people in organization</td>
<td>Weber, Marx</td>
</tr>
</tbody>
</table>

### 3. A new system of classification of TMOs

A multi-organization, is “the union of parts of several organizations, each part being a subset of the interests of its own organization. It is defined by the performance of a particular task through the interaction between individuals” (Stringer, 1967, p. 107). The term “Temporary Multi-Organization” was first used by Trist (1963) in *Organisational Choice*. A TMO is a “socio-technical system; [...] a system in which social and interpersonal relationships are partly conditioned by the task – and vice
versa”. (Stringer, 1967, p. 107) TMOs have four important characteristics. First, effective communication is essential if such a multi-organization is to perform its task adequately. Second, relations in a TMO are conditioned by particular tasks, which are not directly related to the organization mission, but central to the project goal. Third, participants of the TMO “have other interests apart from the building in question and once it is complete this reason for their collaboration disappears” (Stringer, 1967, p. 107). Fourth, legal frames and procurement strategies describe only the ‘formal’ system and do not provide the full representation of the dynamic network of the TMO. (Bonami et al., 1996)

Two main challenges must be faced while understanding the structuring of TMOs. First, organizations are rarely studied according to their structural relations within groups, and even less frequently, in temporary groups. (Bryant et al., 1978; Cherns and Bryant, 1984; Stringer, 1967) Studies about inter-firm relations do not often take into account the temporary character of TMOs and the fact that TMOs are created for and around a temporary project (despite the obvious relations of procurement highlighted in supply chains). Second, project participants are not fully integrated (neither within organizations nor between organizations). It is therefore crucial to challenge “the dominant view of organizations as formal structural entities, constrained by internal and external pressures”. (Demers, 2007, p.54) In fact, Pinder and Moore suggest that “multiple parameters need to be employed to capture the complexity of organizational similarities and differences”. (1979, in Royston and Greenwood, 1993, p.1054)

4. Research methods

This ongoing research project aims at answering the following research questions: What are the differences between the formal structure of the procurement strategy of a project and the real relationships of formal and informal communication, authority and procedures that exist between the members of the TMO? And, How can these differences be represented? Answering these questions imply identifying the contingency factors that take into account both formal and informal relationships between project participants. Some indicators, in relation to decision outcomes and processes discrepancies, also led us to inquire into the potential interference of the organizational structure of independent entities (organizations) on the procurement strategy. This led us to carefully consider in our analysis the role of users in the project process and their effective influence on the organizational structure.

The methods included the review of theories, case studies and concepts related with construction procurement, organizational design, construction project management and communication management. Among these, our attention was drawn towards classification systems. Two complementary methods were combined for our analysis: A survey of nine project case studies and the development of an additional three case studies of construction clients in Canada. The case survey followed the methodology proposed by Larsson (1993) and the case studies followed the methodology proposed by Yin (1994). In addition, Proverbs and Gameson’s (2008) tools for the identification of cases and Love et al.’s (2002) methods for the triangulation of qualitative data were combined for the analysis of the information.
The nine cases of the case survey responded to the following criteria: They were completed within the last ten years; located in Canada; represented an array of various uses; had different funding options; and were of varying size. The nine projects are: Urban development Angus; Centre for public transportation buses; Urban Park Grou; Renovation of the Saint-James Church; Hotel Mont-tremblant; Renovation and addition School M-F; Pavilion 400; New facilities for the School MP and the Conservation of a rural territory (see Table 3).

The three clients chosen for the detailed case studies responded to the following criteria: they are institutional clients; they are conducting a construction project; they are located in Canada; they have a defined construction project or real estate department or unit. The three projects are: The Montreal Oratory; the University Campus in Quebec and the Quebec Parks Society (see Table 4).

The framework for the analysis of collected data included a common structure for the detailed examination of the project process based on the nine areas of knowledge proposed by the Project Management Institute (PMI, 2008). In all cases, the organisational structure of the TMO was first represented in a graphic way and then analyzed highlighting the relations between different actors and their strategic interests to participate in the project. For the detailed case studies, clients were first classified according to: (i) origin; (ii) profile; (iii) level of construction experience; (iv) structure (as proposed by the PMI); and (iv) typologies.

The analysis of the literature and the cases showed that the following contingency factors have an important influence on the structuring of the TMO:

- The relations between the internal structures of each of the organizations of the TMO;
- The structure of the department or the team in charge of project management;
- The level of authority of actors within and between the organization(s), specifically in the interfaces between departments;
- The level of authority of actors within the project team. The project team is described here as the group formed by the individual delegates of each organization bonded by the procurement scheme, who act as representatives of their organization during the course of the project (for example in construction site meetings);
- The inter-organizational relationships (entity to entity) and their evolution of the structure in time through the different phases of the project;
- The inter-actor relationships: “unit to unit” as well as “unit to entity”
- The actual roles and responsibility of actors (organizations and end-users) within the procurement scheme, according to the legal framework.

Although the research is designed to inquire in all these areas, this paper focuses on the first phase of the research, which has only developed the last three contingency factors (in italics). The analysis of the survey of the nine project case studies (Table 3) and the additional three client case studies (Table 4) included a partial classifications of (i) the client organization, and (ii) the TMO as a whole (see also Figure 1). For the three case studies we also classified the organization responsible for managing the construction of the project. In reality, this analysis needs to be extended to all the participants of the
TMO, but this task was out of the scope of this article. However, the analysis has already permitted us to produce a preliminary typology of TMOs that includes *intra*-organizational relations, *inter*-organizational relations and both project procedures and management practices.

5. Preliminary research results

Table 3 and Table 4 show the cases that were analyzed and the classifications that we identified for both the client organization and the TMO as a whole. The right column in each table refers to the category of the TMO that corresponds to the typology proposed in this article (Figure 1). We identified the following patterns in the nine cases examined in the survey (1 to 9) and the three project case studies (a, b, c):

1. Fragile relations exist between the client and consultants and contractors. This relationship is not necessarily conducted through the existing (formal) channels and protocols;
2. Sometimes “non-expert” participants of the client organization act informally as client representatives, exchanging information with other members of the TMO (particularly with consultants and – in some cases – with contractors;
3. Large amounts of informal communication and decision-making are made outside the pre-established structures and protocols for conducting the projects.

These three patterns are not at all surprising; in fact, they have all been previously discussed in similar forms by authors such as Cherns and Bryant (1984), Naoum (2001), Baiden (2006), Dainty (2006), Emmitt (2007) and Rank (2008). However, we are able to identify *how* these patterns affect the structure of the TMO. Figure 1 represents in a graphic manner the influence of the three contingency factors studied here in the structure of the TMO. The diagrams presented in Figure 1 do not cover the whole range of possible inter-firm relationships. However, they represent the most important patterns that we identified. The vertical reading of each typology permits to identify the formal or informal sequence of the transfer of needs between project actors and which eventually leads to the commissioning of the project. The project stakeholders are grouped in four categories:

a. The users, which correspond to the direct beneficiaries of the project, individuals or groups whose needs will ultimately be fulfilled through the project outcome.

b. The procurement organization also referred to as the “client organization”, which ultimately assumes responsibility for the project (program, economic feasibility, risks) and manages the procurement process, directly or through delegated professionals.

c. The operator, which corresponds to the internal unit or external organization that is responsible for operating and maintaining the facility on behalf of the owner.

d. The participants of the TMO that are responsible for the execution of the project: namely the consultants and contractors that are responsible for the design, planning and construction of the project.
The system of classification shown in Figure 1 emphasizes the role of the project initiator and its relation with the users. It also highlights informal relationships that exist between actors of the TMO, besides the relations dictated by the formal procurement scheme. This responds to the pattern we found in the case survey and the case studies, namely that the procurement strategy does not represent the role of external or internal users (procurement strategies explain the relations between the client – as a single entity - and consultants and contractors). In fact, the analysis of the case studies and the case survey showed that the structure of the TMO cannot be properly represented without clarifying their role and relations with other organizations. The cases showed that users influence the project in many ways even if they are not formally involved in the procurement scheme.

The classification includes nine configurations that correspond to the possible relations between actors and the different roles of users, clients and operators in the process of project initiation and procurement:

1) Institutional configurations: they appear when secondary experienced clients (as defined in table 1) procure construction projects. Secondary, experienced clients are often large organizations which have internal units for project procurement.
   a) User initiated: In this case, users (external or internal) initiate the project by influencing the occupant unit (directly or through external pressure groups) and/or the procurement unit. They have a strong influence on the principal agents of the design and management group. Examples include the case of a building project conducted in a University due to the lobbying and pressure of student associations.
   b) External operator-influenced: In this case, a corporate division or franchise initiates the project, based on operational needs. The project is then presented to the head office (the owner) for approval. This is for instance the case of Park operators in Canada, which act as semi-autonomous organizations of the Ministry of the environment and which have the capacity to initiate their own construction projects.
   c) Strategy-initiated: In this case, the client board or chief executives initiate the project based on a strategic plan. For example, the case of a building renovation that responds to a market opportunity identified by the company’s chief executive.
   d) Owner-occupant initiated: In this case, the owner responds to the pressure of internal occupants. The occupant formulates the needs and launches the project process, which is managed by a promoter or the client organization. This is for instance the case of the development of renovations initiated by the occupants of a building to respond to their own needs of space.

2) Developer configuration: it appears when experienced, and sometimes fully integrated, client organizations procure buildings as their core business. Residential and commercial developers exemplify this category.

3) Vertically integrated: This configuration represents the case in which a highly complex organization (or a consortium) comprising multiple specialized units conducts an integrated approach to design, build, finance and operate the project. It represents various alternatives of Built – Operate - Transfer (BOT) procurement systems.

4) User driven: In this case, the user is the main driver of the project. End-users are guided or supported by an organization but they directly procure their own individual projects. This is the
case of new procurement approaches used today for low-cost housing projects in developing
countries (not surveyed in this article), in which a development-oriented organization supports
individual families in the process of conducting their own home projects. (Lizarralde et al.,
2009)

5) Cooperative: In this case, end-users are both the initiators and the operators of the facility. They
require project sponsors and may create a client organization to procure the project. Residential cooperatives in Canada exemplify this type of configuration.

6) Classic: In this case, the user and the procurement organization are the same entity. The client
(a simple structure) builds for its own use and procures the project through a contractor. This
configuration is well illustrated by Mintzberg’s (1979) “simple entrepreneurial structure”.
Common examples include the family that commissions a customized home or a family
business that procures a home-based working space.

Table 3: Case survey classification

<table>
<thead>
<tr>
<th>Case Survey</th>
<th>Client</th>
<th>Level of construction experience</th>
<th>Corresponding TMO classification</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Origin</td>
<td>Profile</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Mixed</td>
<td>Secondary</td>
<td>Experienced</td>
</tr>
<tr>
<td>2</td>
<td>Mixed</td>
<td>Secondary</td>
<td>Experienced</td>
</tr>
<tr>
<td>3</td>
<td>Public</td>
<td>Secondary</td>
<td>Inexperienced</td>
</tr>
<tr>
<td>4</td>
<td>Mixed</td>
<td>Secondary</td>
<td>Inexperienced</td>
</tr>
<tr>
<td>5</td>
<td>Private</td>
<td>Secondary</td>
<td>Experienced</td>
</tr>
<tr>
<td>6</td>
<td>Private</td>
<td>Secondary</td>
<td>Inexperienced</td>
</tr>
<tr>
<td>7</td>
<td>Public</td>
<td>Secondary</td>
<td>Experienced</td>
</tr>
<tr>
<td>8</td>
<td>Mixed</td>
<td>Secondary</td>
<td>Inexperienced</td>
</tr>
<tr>
<td>9</td>
<td>Mixed</td>
<td>Secondary</td>
<td>Inexperienced</td>
</tr>
</tbody>
</table>
Table 4: Case study classification

<table>
<thead>
<tr>
<th>Case Studies</th>
<th>Client</th>
<th>Level of construction experience</th>
<th>PMI Structure</th>
<th>Structural configuration (Mintzberg)</th>
<th>Metaphor (Morgan)</th>
<th>Procurement systems</th>
<th>Corresponding typology</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Institutional</td>
<td>Secondary client</td>
<td>Experienced</td>
<td>Functional organisation</td>
<td>A mix of both divisionalised and missionary types of organisation.</td>
<td>Culture</td>
<td>Separate - coordinated, Integrated (Design-Build)</td>
</tr>
<tr>
<td>C</td>
<td>Institutional</td>
<td>Secondary client</td>
<td>Experienced</td>
<td>Matrix organisation</td>
<td>Mixed, mostly hierarchical - professional bureaucracy; divisionalised format for the operations of separate sites.</td>
<td>Brain</td>
<td>Separate - coordinated, Integrated (Design-Build), Project Management</td>
</tr>
</tbody>
</table>

Figure 1: System of classification of TMOs in the building sector
6. Discussion and further research

This article briefly established the theoretical basis for the arguments in favour of a classification of Temporary Multi-organizations in the construction industry. A case survey and three case studies were conducted in order to draw patterns of structures, processes, communication and general project behaviour. We analyzed the structure and functioning of TMOs according to three particular contingency factors. We identified differences between (i) the formal structure of the procurement strategy of a project, and (ii) the real relationships of formal and informal communication, authority and procedures that exist between the actors of the TMO. The research proposes a common structure of analysis built upon the knowledge gained from previous systems based on typology, taxonomy and metaphors. The results include the proposition of nine categories that represent the various possible typologies of TMOs and open the debate on to the pertinence of current systems of classification for the understanding of TMOs.

The proposed system of classification of TMOs recognizes the influence of four main groups of actors; an approach that differs from the traditional procurement system in which only clients, consultants and contractors are fully represented. The categories proposed, although extremely schematic, do produce a rich picture of the overall project nature and behaviour. They show the strategic role of each actor (particularly end-users) and the path of project commissioning. The categories also highlight the influence of power relationships between actors and their multiple and potential conflicting roles. In doing so, it questions the project structures based exclusively on procurement strategies and argues for the consideration of informal communication, networks, power roles and effective project processes.

Further research must address the contingency factors that have not yet been developed in this article. It is also of prime importance to validate the system proposed here with a wider set of case studies (including also projects in different countries and contexts). The preliminary results of the study permit to formulate some questions that will have to be addressed in the following phases of this ongoing research project:

a. What is the influence of the internal structures of each organization in the overall structuring of the TMO?

b. How do the structuring of the TMO (considering formal and informal relationships between all project actors) influence procurement strategies – and vice versa?

c. Is the system of classification proposed in this article pertinent if additional contingency factors are included?

References


Stringer, J. (1967) "Operational Research for "Multi-Organizations". *OR*, 18(2), 105-120.


