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## Exploring the influence of external actors on the cooperation in public–private project organizations for constructing infrastructure

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## **Title**

Exploring the influence of external actors on the cooperation in public-private project organizations for constructing infrastructure.

## **Abstract**

Though different forms of public-private partnerships exist, in the organizational structure of most forms a public and a private project organization can be derived, resulting in two collaborating project organizations. The literature on project management however mostly considers one project organization. The literature on public-private partnerships considers the public part of the organization mostly as ‘the client’. This research focuses on the relationships between public and private organizations: the two collaborating project organizations, the relationship with their parent organizations, and with external actors. Exploratory interviews in three cases uncovered five mechanisms leading to tensions between project partners: ambiguity, conflict of interest, triangular relationships, unclear purpose and organizational context.

## **Graphical abstract**

## **Selected keywords**

public-private collaboration, social networks, case study, relationships, project organization, parent organization

## 1 Introduction

The term ‘public-private partnership’ is used for several contractual arrangements between public and private partners, each with different roles for both partners and different distributions of responsibilities (Beato and Vives, 1996; Child et al., 2005; Cruz and Marques, 2013; Ke et al., 2009; Kwak et al., 2009). Based on surveys on public and private practitioners, factors are revealed that influence the effectiveness of the cooperation and the success of the project (Black et al., 2000; Chan et al., 2004a; Hwang et al., 2013; Jefferies, 2006; Zhang, 2005). After studying the literature on different public-private project arrangements Kwak et al. (2009) conclude that the factors can be organized in four groups; (1) the selection of an appropriate concessionaire, (2) an appropriate allocation of risks, (3) a sound financial package and (4) a competent government. The fact that the alignment with the parent organization is a factor of influence for project performance is known from research on project management (Chan et al., 2004b; Cox et al., 2003; Meredith and Mantel Jr, 2009). Literature on public-private partnership, however, is not clearly addressing the influence of the public parent in public-private project arrangements. For instance in the roles Kwak et al. (2009) mention to define a competent government (in their 4th group of influential factors) no distinction is made between direct and indirect involvement in the project organization. In many articles on public projects the public involvement is addressed as ‘the client’ or ‘owner’ suggesting a passive role in the project, (Aarseth, 2012; Black et al., 2000; Chan et al., 2004a; Doloi, 2012; Holt and Rowe, 2000; Smyth and Edkins, 2007; Winch and Leiringer, 2016). The main task of the public involvement would be ensuring favorable conditions for the collaborative arrangement (Figure 1A).

In Europe Infrastructure projects are built through public-private partnerships in which the public partner is acting in an active project management role (Hertogh et al., 2008; Hertogh and Westerveld, 2010). The direct public involvement is organized in a public project delivery organization (Figure 1B). To deliver the project to the parent organization the public delivery organization is collaborating with consultants and contractors in a combined project organization (Figure 1C). From the perspective of the project manager of the public project delivery organization the parent organization is their client (Hertogh and Westerveld, 2010; Koops et al., 2016; Koops et al., 2015). The preparation and execution of infrastructure projects can take several years and the client’s requirements can change over time

(Bosch-Rekvelde, 2011; Hertogh and Westerveld, 2010; Parfitt and Sanvido, 1993; Pinto and Slevin, 1988). As *client satisfaction* is important to the public project manager (Koops et al., 2016; Koops et al., 2015; Verweij, 2015), the relationship between the project organization and their parent organizations can be stressful (Hertogh and Westerveld, 2010).

<< *please insert Figure 1 approximately here* >>

The combined project organization is operating in a dynamic network environment (Belassi and Tukel, 1996; Chan, 2001; Davis, 2014) of organizations and stakeholder groups (Figure 2). This dynamic environment forces the project organization to constantly find a balance between product criteria to satisfy the client, stakeholders and users and project management criteria to meet the given constraints (Cooke-Davis, 2002; Sanvido et al., 1992). Every discussion about this balance is a potential conflict between partners (Dille and Soderlund, 2011; Leufkens and Noorderhaven, 2011), and hence a potential risk for the project. The stressful relationship that the public project organization experiences, indicates that the parent organization is a disturbing factor in the cooperation in the combined project organization, while true teamwork and relational attitude are important conditions for a successful outcome (Suprpto, 2015). Literature on the influence of this stressful relationship on the collaboration between public and private partners in the combined project organization is limited though. Therefore this research focuses on the influence of external actors on the relationship between public and private partners in the combined project organization. External actors are defined as actors from outside the project organizations. In research on project organizations only limited attention has been given to the interfaces between the temporary project organization and the permanent organization that configures the project (Winch, 2013). Our research question is ‘How do external actors, especially the public parent organization, influence the combined project organization?’.

<< *please insert Figure 2 approximately here* >>

The aim of this paper is to understand the influences from surrounding organizations on the combined project organization. Based on this, improvements can be identified in order to increase the efficiency and effectiveness of the cooperation in the combined project organization. The recommendations are based on exploratory in-depth interviews in three cases and analysis of the outcomes using Social Network Analysis software. The derived assertions are then discussed and

illustrated by examples from the cases. Concluding remarks and suggestions for future research are given in the last section.

## **2 Literature overview**

Numerous publications related to factors for project success identify the interaction with the environment as an important factor (see for example Chan et al., 2004a, Sanvido et al. 1992). However, the perspective from which the factors are identified, is either unclear or different perspectives are included in the outcomes. For this study the perspective is relevant in the approach of external influences. Hence, we investigated literature on collaborative and inter-organizational relations. As we want to identify not only the relations, but on a deeper level the influence of these relationships, we turned to literature about (tensions in) professional relationships.

### *2.1 Cooperative activities with surrounding actors*

The revised definition of ‘project’ by Turner and Müller (2003, p.7) puts more emphasis on the project team as an organization: *‘a project is a temporary organization to which resources are assigned to undertake a unique, novel and transient endeavor managing the inherent uncertainty and need for integration in order to deliver beneficial objectives of change’*. Considering this definition of a project, the network of the combined organization consists of at least four organizations: the public parent organization, the public project organization, the private parent organization and the private project organization (Figure 2). The number of organizations in the network is even more when the parent organization consist of several ‘parents’, like in a private consortium or with multiple commissioning in the public organization. The organization of cooperative activities can assume many forms (Child et al., 2005). At one end of the spectrum the hierarchical lines of a so-called ‘conventional’ organization dominated by one partner can be recognized. At the other end a network approach is presented, in which collaborative partners are linked together by a variety of relationships (Child et al., 2005; van Marrewijk, 2005). Sydow and Windeler (1998) examined inter-organizational issues and recommended investigation on how structures develop from actions and how actions flow from structures. In other words, actions primarily taken from a position in the hierarchical organization model create a network

that can be used again for actions. Individuals forming the project organization are the main source of information for the course of action (Packendorff, 1995).

From an organizational perspective based on hierarchical lines, the connections of individuals in the project organization relate to the responsibilities of the organization that the individuals are part of, and the specific organizational task(s) the individuals have. To clarify involvement, tasks and responsibilities in an organization, the RACI-method can be used, mentioned in for instance the PMBOK (PMBOK®, 2008). RACI is an abbreviation of Responsible, Accountable, Consult and Inform and is sometimes spelled RASCI, with the S of Support added (Cabanillas et al., 2011). This method helps people in an organization to identify explicitly the differences in the contribution people have in organizational processes. In the RA(S)CI definition the Responsible person(s) does the work to achieve the task. The project manager is Responsible for the project (Gul, 2012; Jones and Deckro, 1993; Meredith and Mantel Jr, 2009). In large projects the Responsibility is covered by the project management team (Prakash Prabhakar, 2008a). The Responsible actors can delegate their tasks to others, then the term ‘Support’ is used. The person that is ultimately answerable for the correct completion of the task or deliverable, is indicated with the term Accountable. Instead of Accountable also Approver or Approving authority is used. The Accountable person must approve work that the Responsible(s) provide. The Consulted persons are typically ‘subject matter experts’, whose opinion is sought by others. Persons who are Informed about the project are kept up-to-date on progress on tasks or deliverables. By ‘responsibility-charting’ the activities and responsibilities from different people involved in the processes can be made clear. Responsibility-charting connects activities to each other. These different interactions form the actual network of relationships in the project organization. This network of relationships can provide valuable insights in inter-organizational relationships (Child et al., 2005). In order to understand the nature of interaction among participating individuals in a specific project context Cicmil and Marshall (2005) state that not the contractual, but the situational aspect of relationships is of interest when studying the complex interactions among participating actors.

Limited awareness or understanding of responsibilities or interests of other persons or other organizational units can lead to tensions (Sy and Côté, 2004; van Marrewijk, 2005). The importance of understanding tensions as being located at several levels of activity is emphasized in literature (Bresnen

and Marshall, 2000; Cicmil and Marshall, 2005; Holt and Rowe, 2000). Tensions are framed as problems in terms of managerial differences of opinions for preferred action in a given situation where co-existing but different arenas for action are leading to deadlock or conflict (Arvidsson, 2009). Tension can stimulate or frustrate the involved team and the cooperation between people (Arvidsson, 2009; Gul, 2012; Jones and Deckro, 1993) and when underestimated or neglected tension can lead to conflict (Child et al., 2005; van Marrewijk, 2005). Tension can even lead to frustration within departments of the parent organization and through that, have influence on other projects (Gul, 2012). Tension that arises between parent and project organization can be noticeable in the project organization through individual actions. Tension on the interface between the parent organization and the project organization can flow through the project organization to the project partner (Figure 2).

Though much of the literature cited above is based on individual (often mega-) projects or specific relational situations (alliances, procurement phase) we notice that for the understanding of inter-organizational relationships individual actions in the personal networks are of interest to better understand the influences people experience.

## *2.2 Influences on the combined project organisation*

All actors that cannot be disregarded while developing the project (Bryson, 2004) or all individuals or groups that have a special interest in the project or are affected by the outcome (Meredith and Mantel Jr, 2009) are indicated with the term 'stakeholders'. To ensure the success of the project a wide range of stakeholders' interest and demands need to be considered in managerial decision-making (Aaltonen, 2011; Hertogh and Westerveld, 2010). Depending on whether it is defined from public or private perspective, the definition of 'stakeholder' differs in the literature. In broad sense, the term 'stakeholder' can include senior management, office staff, the project owner, consultants, project team members, subcontractors, suppliers and various user stakeholder groups (Bakker et al., 2010; Dulaimi et al., 2007; McLeod et al., 2012). Some stakeholders do not have a direct influence on the project, but they can have an indirect influence. They can express their opinion to politicians, journalists or in official legal procedures (Hertogh and Westerveld, 2010). Aaltonen (2011) distinguishes 'internal' and 'external' stakeholders. In his definition internal stakeholders are member of the coalition and, according to

Aaltonen, support the project. For public management a wide interpretation of stakeholders is advised as it reflects the essence of democracy and social justice that anyone can have influence (Bryson, 2004).

To ensure a successful outcome, the project management team must manage the influence of the various stakeholders. In the previous section we concluded that for the understanding of inter-organizational relationships individual actions in the personal networks are of interest to the understand the influences people experience. The people functioning in the project management team are responsible for identifying and communicating with all stakeholders surrounding the project in order to determine the project requirements and expectations (Aaltonen, 2011; PMBOK®, 2008). Van Marrewijk et al. (2008) recommend an internally focused, contextually-grounded view on project practices. According to them the failure of a project (in terms of budget overruns and delays) should be seen as the result of normal practice of professionals operating with limited knowledge, but influenced dramatically by a range of ambiguous and uncertain external and internal forces (Van Marrewijk et al., 2008). Different values, interests, needs, and expectations become relevant to particular interpretations depending on the social, economic, historical, and organizational context in which a project is executed (McLeod et al., 2012). Therefore the individual level for research on the influence of external influences on the public private collaboration in the project is the project management team.

Based on their findings in two megaprojects, Van Marrewijk argues that project managers are trying to create some sense in contexts of different and variable rationalities and relying ultimately on documents with variable interpretations, incomplete data and many opportunities for gaps to arise between talk, actions and decisions (Marrewijk, 2007 p. 579). Jones and Deckro (1993) studied project management conflicts within one-organization and indicated four sources of conflict and four types of conflict leading to sixteen possible sources of tension (Jones and Deckro, 1993). Based on the above we argue that tensions stemming from different realities and different responsibilities are entering the combined project organization every day. These tensions are a potential threat for the successful outcome. Our study aims at identifying the structural elements of tension originating from the specific organizational context and the characteristics of infrastructure projects.

### 3 Case study

#### 3.1 Case study setup

For this research a multiple case study is performed, in which the project organization is the embedded unit of analysis (Yin, 2013). In three cases the combined project organizations are studied. The criteria to select the projects were scope, contractual arrangements and level of government. The scope of the selected projects involves the (re)construction of a road with several supporting constructions. In two projects building a tunnel is part of the scope. By selecting cases with a comparable scope the licensing procedures contain similar elements. The private involvement in the three projects is arranged by a design and construct contract. Hence project phases in which the cooperation is operationalized are similar. The outcomes of the research on success perspectives held by public managers (Koops et al., 2015) indicate that the influence of the parent organization is different whether the public project manager acts on local, regional or national level. Therefore projects commissioned on different public levels were selected. The selected projects are initiated by the local (case I), regional (case II) and national (case III) government.

In social science the collective target in a multi case study is called the 'quintain'. '*The quintain is an object or phenomenon or condition to be studied*' (Stake, 2006, p. 5). The quintain is the umbrella for the cases studied and needs to be generic. The quintain in this multi case study is '*the relationships held by the project team*'. As the object of the research in each case is the same, the cases are categorically bound together (Stake, 2006).

Both public and private project managers are asked for their cooperation in this research. The interviewees are the team members who are considered part of the project management team by the project manager. In Social Network Analysis (SNA) this is indicated as the ego-centric approach, with the project manager as the starting point. This resulted in 26 interviews. By interviewing core project team members indicated by both the public and the private project manager the network of the core of the project organization is mapped. In case I three persons of the public project team are interviewed and two persons of the private project team. In case II next to the public project manager five people of each project team are interviewed. In case III five people of the public project management team are

interviewed and six people of the private project management team. The interviewees are Responsible for specific sub-processes in the project organization. To see what links the core of the project organization to the environment, interviewees are asked with whom they had contact. In this research the term 'actor' is used for the mentioned contacts. For each actor the interviewee is asked to specify the purpose of their contact and encouraged to elaborate on their assessment of the contribution to the project. Following the RA(S)CI-method the project management team is Responsible for the project. The possible purposes of the relationship with actors are Accountability (Approver), Support, Consultation and Inform. For each actor the role description (who), and the purpose of the relationship (why) were noted in the interview. After the explanation of the contribution of the actors, the interviewees were asked to capture the nature of the contact explicitly (positive, negative or both) and the effect on the project (positive, negative or neutral). These answers were used in the SNA and the nuances the interviewees mentioned were used in the cross case analysis.

The interviews of the first and second case were held just after the project was delivered. The interviews of the third case were held halfway the execution phase.

### *3.2 Methodology*

Studying projects as action systems means studying contacts, ties, connections and attachments that relate one individual to another (Packendorff, 1995; Sydow and Windeler, 1998). The relations are not the properties of individuals, but of the relational systems of individuals built up from connected parts of interacting people, the method appropriate for analyzing relational data is that of social network analysis (Scott, 2012; Wasserman and Faust, 1994; Winch, 2013). In social network analysis the relations are treated as expressing the linkages that run between individuals. Describing network structures opens the possibility to investigate relational patterns. Although from different approaches of social network analysis different values can be assigned to positioning the outcomes. The similarities make clear that social network analysis can be seen as a comprehensive approach to the relational features of social structures.

Nowadays social networks are associated with networking sites or services such as Facebook and LinkedIn. The idea is indeed based on social network research conducted by Stanley Milgram (1967).

Social network research is the domain of social sciences and anthropology and was already conducted from the middle of the previous century. The introduction of the computer enabled to process much larger amounts of data and also introduced digital data from communication systems like email, phone records, etcetera. In essence social network analysis is still about mapping the connections between people or groups in social systems (McCarty and Molina, 2015). Generally, research in social networks is looking at a lot of data from interviews or communication systems. In this research the object is a relatively small scale network. It is common when studying small scale social networks to follow a realistic approach to the boundaries of the network: identify those boundaries that are perceived as real by the participants and correspond to the actual boundaries of organizations (Scott, 2012). The identification of a boundary is the outcome of a theoretically formed decision about what is significant in the situation under investigation. For this research the positions of interest are those of the public and private project management team; the boundaries of the analyzed network are formed by their contacts. The performed research is an ego-centric network study and started with the identification of the public and private project manager. The study was expanded with the contacts they identified as the project management team.

An often used supporting element in social network analysis is the sociogram. A sociogram was developed by Moreno in the 1930's and shows in a graph individuals as nodes (points) and relationships as lines between the nodes. Two nodes are connected if they regularly interact with each other in some way. A sociogram allows researchers to visualize the channels through which, for example, information flows from one person to another and through which one person can influence another. It helps to reveal network structures, sub-groups and the location of actors in the network. Using the sociogram it is possible to study who is in the core of the network, and who in the periphery. The sociogram can be used to study several features like the centrality of actors, boundaries, information channels and reachability. The centrality of particular nodes can be considered and the extent to which a whole network has a centralized structure. Both density and centrality are aspects that express the compactness of the network. Density describes the general level of cohesion in the network. Reachability refers to how easy it is for people to contact one another through a limited number of steps: or how easy it is for ideas to be diffused through the network. For analyzing social networks a lot of software packages are

available, for instance Pajek, UCINET, KliqFinder or Visone. Based on the features of the networks, ego-centered, small networks, and the purpose of using the software, Visone (version 2.13) is used to model the outcomes of the interviews. The interviewees, their contacts with characteristics of both the contacts and the relationships were imported in Visone. Initially we analyzed the data of each case in several views and we used these first remarks in the formulation of the themes. Next we performed the cross case analysis.

### *3.3 Approach for the cross case analysis*

This research was set up to examine the influence of the actors in the environment of the combined project organization, and in particular actors from the public parent. By means of an ego-centric approach the network of the core of the combined project organization is mapped for three cases. To support the project analysis the identified actors (nodes) and relationships (links) with specific features as identified in the interviews are imported in Visone and used to visualize the social network of the project management teams. Based on the general purpose layout algorithm the centrality of nodes is studied (see for instance Figure 5). Several graphs, in which colors visualize the features of nodes and links, are used to study patterns in the network. Especially the nodes positioned in the status lay-out (Visone settings: indegree, no value used for plotting) using the attribute 'type of organization' proved to be very useful in this research (see for instance Figure 4). The perceived purpose of the contacts in RASCI-terms is analyzed by coloring the nodes with the same values. The effects of relationships are revealed by coloring the links (see for instance Figure 4).

Usually case studies are studies of particularization more than generalization (Flyvbjerg, 2006; Stake, 2006; Yin, 2013). Via cross case analysis we want to generalize the findings over the cases to be able to learn from them. Cross case analysis can only provide useful information to a limited extent. Based on the similarities between the projects a qualitative analysis of the interviews is considered valuable to see if certain patterns can be discovered: patterns that are related to the features of the project or project organization and have a specific influence on the cooperation between public and private partner. Performing a cross case analysis according to Stake (2006) data from the projects is compared with regard to the quintain. The procedure forces a systematic search for differences and commonalities

in the cases (Figure 3) resulting in ‘assertions’ that must be proven with evidence from the cases. In the procedure, binding elements and unique elements are searched for in order to get better understanding of the quintain, and also to be able to study it further. When issues are important to the quintain, you may assume a general value.

<< please insert Figure 3 approximately here >>

The quintain of this research is to investigate ‘*the influence of relationships on the cooperation in the project organization*’. For guidance through the interview data, with focus on the quintain, we formulated eight themes (1-8 in Table 1). For each case the SNA and the specific answers of the interviewees were analyzed focused on the themes. Based on the occurrence of each theme in each case we noted the prominence of the theme in the case. We analyzed the data of each theme with regard to the expected utility of the theme in the cross case analysis. While analyzing the cases additional findings and unusual situations were found. These lead to a few new themes (9-12 in Table 1), which were also explored systematically in the other cases. Next, each theme is rated for all cases (Table 1). Occurrence in three cases with solid supporting evidence was ranked ‘High’, occurrence of the theme in two cases or with thin evidence was ranked ‘Medium’. Note that we did not rank ‘Low’, which can be explained by the fact that the themes were formulated with general knowledge of the interview results. Based on the outcomes of these steps assertions which support the understanding of the quintain are formulated. These assertions contribute to answering the research question. Each assertion has a single focus, an orientation for understanding the quintain and evidence to support it (Stake, 2006, p. 71). In the following sections the derived assertions are explained, supported by evidence from the cases.

<< please insert Table 1 approximately here >>

#### **4 Results**

In the performed cross case analysis we systematically looked for similarities in the actor system that contribute to explanation of the quintain, supported by evidence from the cases. Our research is set-up to improve practice, as Morris (2010) recommended, so while formulating the assertions we chose to stay close to the practitioners level (Morris, 2010). It shows that relations with external actors can lead to tension in the combined project organization in five ways (Table 2). Following the framework

of Jones and Deckro (1993) we saw two types of tension *intersender*, where the expectations of one member of the person's role set are incompatible with the expectations of another member in the role set and *intrasender* in which the expectations from a single role set member are mutually contradictory. In the following sections we present the assertions that reveal the sources of these tensions, with the supporting evidence from the interviews and the SNA.

The SNA included characteristics of the parent organization of the actors. In the analysis we displayed the characteristics separately in Visone. This view showed a large spread of the contacts in the public domain, often appointed as Accountable by the interviewees. The first three findings are derived from these relationships, appointing specific situations of *authority bifurcation* and *internal politics* as sources of conflict (Jones and Deckro, 1993). In the following section we will explain that the fourth and fifth finding (Table 2) originate from observations in interviews that were supported by SNA analysis of the links. They relate to the alignment of the involved organizations and *technical complexity* and *life cycle* as potential sources of conflicts. (Jones and Deckro, 1993).

<< please insert Table 2 approximately here >>

In case I and III the main reason for the combined project organization to maintain contact with the public parent organization is the Accountability of the actor (Table 3). Analysis of the background of the actors who are held Accountable in the public parent organization shows three different types of Accountability in the public organization: the accountability for delivering the project within given constraints, the accountability for current operations and the accountability for licensing procedures. The accountability for current operations is divided in the operation of specific assets (like traffic control systems), road maintenance and public space. Accountability for licensing procedures is further divided in different knowledge fields: construction safety, operational safety, (soil) pollution, archeology, et cetera. The accountable actors are representatives of different public departments with specific responsibilities that relate them to the project. This distribution of responsibilities within the parent organization is a potential source of tension in the public-private project organization. The following quote from the project manager in case III illustrates this: '*For the private party we are all part of the same parent company. While from our perspective it is a very different department where we – the public*

*project organization – have no influence. It is for the private party sometimes unclear how responsibilities are divided in our internal organization.’.*

*<< please insert Table 3 approximately here >>*

The ambiguity in accountability is in line with earlier research (Hertogh and Westerveld, 2010; Klijn and Teisman, 2003). Further analysis of the large amount of different responsibilities in the parent organization revealed that the different forms of Accountability can lead to conflicts in the project organization. The first source of conflict was found between the responsibility for the execution of the project and the responsibility for the usage of the new and current infrastructure. The second source of conflict is typically for the public sector and relates possible conflicts of interest between the project interests and the public accountability in licensing procedures and permits. Within the public setting the public responsibility to monitor the legal frameworks and to carry out the law and regulations is a completely different responsibility than the responsibility for delivering the project within the given constraints. Regardless of the source, conflicts between public parent organization and public project organization can affect the private project organization.

In the following sections the derived mechanisms (Table 2) are further explained, leading to the derived assertions.

#### *4.1 Ambiguous connection*

The public parent organization is the owner of the current infrastructure and becomes owner of the new or renewed infrastructure. The project organization is responsible for creating the new (renewed) infrastructure. They relate to each other as ‘line’ to ‘project’. Conflicts of interest between project and line organization are well known in matrix organizations (Arvidsson, 2009; Jones and Deckro, 1993; Kuprenas, 2003; Sy and Côté, 2004). In case of a combined project organization the private partner is becoming part of this conflict. In case I (local level) the connection between line organization and project organization is the most clear. A specific actor was indicated by the public project manager of this case as the official principal from whom the public project manager received his assignment. In case II (regional level) the project was that extraordinary for the parent organization that special organizational arrangements were made. The connection between parent and project organization was made at the

highest political level (provincial executive). In case III (national level) the connection between parent and project is made at a specific department for projects in the parent organization. This organizational arrangement introduces an extra interface with the parent organization, next to line activities and licensing departments. Table 2 shows that the main reason for communication with the parent organization in case III is decision-making. The following statement of the public project manager in case III illustrates this observation. Explaining the purpose of two of his contacts he stated: “*Director X has to take decisions affecting the project. These are internal decisions that affect the project contract (time, money, scope) as opposed to Director Y taking decisions that pose a contractual amendment, within the limits of time, money and scope*”.

Further analysis shows that fragmented project responsibility within the public parent organization does not contribute to cooperation in the project. It causes confusion and debate within and between project management teams. The assertion based on this reads positively formulated as follows: **The explicit distinction between a project responsible person at the owner-client, and the owner-operator in the parent organization contributes to the cooperation in the project.** Clear separation of the representation of owner-operator interest and project interests have to be visible to the individuals involved in the public and private project organization. This includes the organization at the strategic level of the project organization. The evidence to support this assertion contains both positive as well as negative examples from the cases.

In case I both the public as well as the private project manager was positive about the actor of their counterpart at strategic level. Remarkably the own project management organization was not aware of this positive influence on their project partner, since these contacts were not mentioned by their own project organization.

The public project organization in case II was organized ‘at arm’s length’ of the parent organization. Analysis of the contacts shows that the purpose of contacts is irregular in the second case, compared to the other two cases (Table 3). In the words of an interviewee in case II: ‘*the emphasis is on informing the governmental network*’. In the public project organization a project director was actively involved. The project director acted mostly in the processes towards external stakeholders, including the parent organization and supporting partner organizations. His involvement in these processes had a positive

influence on both the cooperation as well as the project performance. In this case, fragmented project responsibility mingled with line responsibility, was also avoided by renaming and explicit positioning of the project 'board'. The project management team used the term 'coordination group' to appoint the representatives of the parent organizations involved and put more emphasis on the expected contribution to the project: coordinate the line activities to align with the project.

In case III the negative side of unclear representation of the project in the parent organization was found. A specific example that illustrates this is found on the interface of the new and the existing traffic control systems. One of the interviewees mentioned that the traffic control system they were going to deliver properly according to the specifications, would not fit with the existing system in the parent organization. The system the project was going to deliver, was consistent with a new system that should have been implemented in the parent organization in the same period the project was built. But the intended new situation in the receiving department of the parent organization was not achieved. The private project management organization foresaw a problem in delivering the project, but did not know where to address it.

In general the cases show that relationships between the parent organizations with the public or private project management team do not necessarily contribute positively to the project. But if relationships are maintained with a specific representative for the project, they seem to contribute to better cooperation and project results.

#### *4.2 Conflict of interest*

The appearance of tension originating from obtaining licenses was most frequent in the cases. In all cases negative effects were reported if the actor was Accountable for a specific issue or asset in the projects. The approval of these actors resulted (direct or indirect) in a permit or license. In case I this concerned safety issues. In case II the most important permit was the opening permit, depending on acceptance of the safety control system. And in case III these were the authorizations the project needed for approval of correct design and execution of specific sub-systems, for instance the ground water system (water permit) and the safety control system (opening permit).

The conflicts of interest caused by the differences in responsibilities in these licensing procedures are of a completely different order than the conflict described in the previous subsection. For the private partner the public project organization is part of the processes of obtaining the license. The involvement of the public partner can contribute to an effective process. For the public project organization their involvement in the licensing processes is a very sensitive matter, particularly the licenses issued by their own parent organization. All apparent conflicts of interest in the granting of the license should be avoided in the public domain. So the public project organization wants to be involved in these processes as little as possible. The public value 'legality' competes with the commercial value 'effectiveness' (Smit and Thiel, 2002). This observation leads to the following assertion: **Remaining distant from the authorization procedures by the public project organization to prevent conflict of interest has a negative influence on the cooperation in the project.**

Supporting evidence for this assertion is found in obtaining a building permit in case I and the opening permit for both case II and III. The private project manager in case I noted that the licensing authority did not know the public project manager, while he himself considered them colleagues. In case III the relationship with the licensing authority was also indicated negative by two private and one public interviewee. The public interviewee mentioned that the troublesome relationship with this stakeholder sometimes strengthens the relationship with the private partner (mutual opponent). Interviewee\_4 in case III: *"This relationship creates a lot of turbulence in the project and takes a lot of time and effort."* In case II these relationships also exist, but the framing of their own position towards permits is different. Rather than position themselves completely outside of the procedures, the public project management team positioned themselves in a facilitating and directing role. The fact that the public project organization of case II was organized 'at arm's length' of the parent organization made it possible for the public project organization to be actively involved in the process. Their involvement had a positive influence on both the cooperation as well as the project performance. In the interviews the interviewees of the public project management team showed great awareness of the influence of these stakeholders and the public project management team made organizational arrangements to have influence on the licensing processes as illustrated by the following example. An interviewee of the public project organization describes one of these assessors as a very precise person. He let a specific person of his

team accompany the private partner in this dossier so he could function as an intermediary between the private actor and the accountable actor (licensing officer). Interviewee\_3 in case II stated: “*The effort that was needed to prevent this issue to become disturbing for the project was disproportionate*”.

#### 4.3 Triangular relationships

The conflicts we are addressing in this assertion are conflicts with owners whose assets are affected by the project. In each project a situation was found in which the executional responsibilities and contractual relationships are divided between private project organization, public project organization and asset owner organization. The public project organization makes contractual arrangements with the asset owner about the changes needed caused by the project scope. For the execution of these agreements the public project organization depends on the private project organization. The private project organization, though, has limited influence on the asset owner because there is no direct contractual relationship. The asset owner can take advantage of the situation in which neither the public project organization nor the private partner is in the lead, causing tension in the project relationships. This observation leads to the following assertion: **Separating the contractual responsibilities from the operationalization of agreements has a negative impact on the cooperation in the project.**

Evidence from the cases that supports this assertion can be found in all three cases. In case I this can explicitly be seen in the relationships with utility companies and in case II and III in the relationship with the future operational management division of the parent organization. This assertion is illustrated with findings from case I. In this case both public and private project team expressed that important negative influence was coming from the utility companies (nodes 12 to 15 in Figure 4). The purpose of the contacts with these nodes was either supporting the project (S), consulting (C) to match the interfaces or deciding (A) in their own project. The relationship with the public and private project management team was negative (node 1, 4, 5). The effect of these relationships on the project was considered worse by the private project management team. They suffered from both delays in their activities as from complaints from residents along the project. The public project manager considered this mostly an operational problem, he classifies the effect neutral. For better understanding of this mechanism the external actors were asked to indicate their relationship with the project. The water supply company

indicated that the project planning was not in line with their internal timeline. Node\_14: “*Internal procedures such as waiting for an approval for an assignment affected the overall schedule of the project*”. The energy company mentions that their assets in this municipality are given special attention because of the poor soil conditions in this area. The energy company is discussing this with the alderman of the parent organization (connecting node 12 to node 38). The discussion is initiated during the executing phase of this case.

<< *please insert Figure 4 approximately here*>>

For some assets a specific department of the parent organization was accountable (current owner). In case II and III the relationships with these departments were similar. The requirements for the assets are collected by the public project organization and translated into contractual requirements. The product the private organization delivers has to meet the requirements, but the tension is in doubt about the correct interpretation of the requirements. Even if the product meets the requirements, acceptance by the future owner is not directly guaranteed. The project management teams of both public and private project organization are struggling with the way the future owner(s) should be involved, without losing grip. Though the actual contribution of the actors to the project is similar in the cases, interviewees appoint the relationships differently. In case II the future owner is framed as ‘Supportive’ by the interviewees, as in ‘*this actor has to provide us with requirements*’, these relationships are perceived less negative than those in case III where the role of the future owner is framed as ‘*the stakeholder has to accept the project*’ (Accountable).

#### *4.4 Purpose unclear*

The next two causes of tension in the combined organization that are found in the cross case analysis are related to the (lack of) alignment between public parent organization, public project organization and private project organization. The first cause was found when analyzing the answers to the question of the purpose of the contact. Although the question ‘what is the purpose of the contact’ seemed easy to the interviewees, the answer was not easily given. Comparing the answers given by different interviewees pointing at the same contact, different purposes are mentioned. In some occasions this can be explained from the specific position and role of the interviewees, but in many occasions it is hard to

explain. In case III a lot of people are involved with an unclear view of the purpose or unclear responsibilities towards the project. In this case new people were added to the organization to help in the process of understanding each other. Extra resources, time and money were added to the combined project organization to frame the input of people with an unclear position and contribution to the project. The cases show that relationships with external contacts without a clear purpose have a negative influence on the project.

In the occasions a common view on the purpose of external relationships is found, the interviewees expressed a strategic approach to the contact(s). A public interviewee in case I complimented a person from the private project organization on her contribution. Interviewee\_01: *'A good, and in this case, a more than excellent, relationship with the actor enhances the effectiveness of action'*. Another example is found in case II in the relationship that is mentioned by a private interviewee with a person that is introduced by the public partner. This person is a former employee and had reached his pension already. The interviewee\_08 stated *'The conversations with stakeholders we had together increased the joint confidence in the outcome.'* The following assertion addresses this: **Having a common view on the purpose of external relations has a positive impact on cooperation between public and private partners in the project.**

An explanation of the involvement of several actors is found in the absence of the specific knowledge in the project organization (public and private). The cases demonstrate that the absence of the necessary knowledge in the combined project organization causes inefficiency and delay. This is caused by new actors that are getting involved when the appropriate knowledge is not present in the team. The actors get involved for their knowledge on a specific subject, which is the main subject from their perspective, but does not cover the whole project. Due to their specific knowledge, these actors have great influence on the trade-offs and the choices to be made on the project management team. In case I this concerned an issue about polluted soil. Both the public as well as the private project management team were in contact with two specialists of the authorization department of the province and both added a team member to the organization. In these relationships a lot of negativity was found, caused by much debate due to professional disagreements. In case III this mechanism was witnessed on three issues, leading to additional actors with specific expertise at three places in the network. In both

cases the combined project organization had to explain the choices made to several actors in the parent organization to gain support for the project choices. Especially in case III, a large project on national level, the organization of support in the parent organization by the public project organization was of major concern.

With this assertion we join Hinds and Weisband (2003) who stated that “to have a shared understanding of the surroundings will enable people to predict the behaviors of the other project team members, reduce errors, misunderstandings and mistakes, and reduce frustration and conflicts such as organizational challenges” (Hinds and Weisband, 2003). We argue that this shared understanding is needed within the combined project organization.

#### *4.5 Organizational context unclear*

The last assertion is derived from several observations in the interviews. The interviewees used different language when referring to the actors: some mentioned names, others mentioned functions or used the roles. Moreover, the denominations of roles and functions were used differently among interviewees, while meaning the same actor (names are asked during the interview to be sure which actor was meant). The interviewees were also ambiguous about the purpose of their contact and at times even questioned the purpose of their own role. Interviewees could indicate the parent organization of their contacts but often could not address in which department and under which supervision the actors belong. These observations show that the establishment of contacts in the project management team is primarily an operational element. Only to a very limited extent a strategic network approach of the contacts is shown in the explanation of the purpose of the contact. The next assertion emphasizes the need for both partners to work with complementary processes which should lead to one goal: **Clear lines of information, responsibilities and decision-making processes from the private project organization through the public project organization and public parent contribute to the cooperation and the successful completion of the project.**

In the cases evidence was found pointing in the direction that unclear roles have a negative effect on the external processes. Or that clear roles, preferably active roles, have a positive effect,. This is illustrated by the networks of case II and III. The layout of the networks of case II and III show clear

differences (Figure 5). The core of the network is formed by those who have the highest degree of centrality. In case II the core of the network shows three central nodes. Around the core seven nodes connect the center with the periphery. In the left graph of Figure 5 the indicated Accountable actors of case II (decision makers) are marked (grey nodes). Most of them are situated in the centre of the network, indicating that the decision makers are in contact with multiple persons in the project network and thus receiving information from multiple channels. Almost all interviewed persons in this case are indicated as decision maker by others. This means that the responsibilities in managing the project by the project management team is recognized by the interviewees. The (only) indicated external decision maker on the private side is the chairman of the board (node 52 in Figure 5). On the public side 12 decision makers are indicated, from four different public organizations. All of them are important in the necessary permit processes. At the top of the network four actors are connected to the project through only one link (node 66, 68, 78, 84). Two of these contacts concerned people who were frustrating the project. The interviewee indicated that the communication strategy was a common strategy of public and private project organisation. Interviewee\_04: *“The joint approach to this stakeholder strengthened the relationship with the private partner.”*.

<< please insert Figure 5 approximately here >>

The core in the network of case III (right graph in Figure 5) is formed by the public interviewees at the left side and the private interviewees at the right side of the center of the network. In the middle of these two groups the public contract manager is situated (node 2 in Figure 5), together with the private clerk (node 10) and the private manager Technical Installations (node 9). Their position in the network shows that they are well connected to the other interviewees and through them with the rest of the network. Remarkably the relationships with these three individuals are indicated negative by several people from their own project management team. The interpretation of their role is perceived by others as not fitting with the position and in the opinion of others contribute negatively to achieving the project goal.

## 5 Discussion

The assertions presented in this paper are derived from the cross case analysis of three cases. According to Stake (2006) this method can be used for 4 to 15 cases. The representativeness of the sample can limit the generalizability of the finding. Some themes from the analysis (Table 2) did not end up in the findings because possible evidence was not supported by all cases. The number of involved parent organizations and the number of self-employed team members were expected to have an influence on the combined project organization, but for these themes not enough supporting evidence was found. Although some indication of an influence was found, this occurrence was too small to draw conclusions. The presented findings are supported by all cases though.

One of the projects studied (case III) was in the final stage of execution, while the other two projects were already handed over to the parent organization. The positive final results (in terms of meeting budget and time constraints) of the first and second case were known at the time the interviews were held. The answers of the interviewees may be biased by insights they had experienced later on in the project process. Data shows no evidence of such a bias: the results of the first and third case show most similarities, one finished and one almost finished project. We believe it was more important that interviewees could reflect on the same phases. In their supporting examples the interviewees mentioned situations in the execution phase and sometimes the design phase. The three cases had comparable phases because the contract type was Design and Build, and comparable scope, hence useful to study these 3 cases.

Several interviewees in case II and III mentioned a purpose of the contact that was not in the questionnaire: that of the preparation of the decision. Some indicated actors were responsible for preparing files for a particular senior manager or director (mayor, minister) who was Accountable. The formal purpose of the relationship with these actors was to Inform them. We included these actors in the analysis of the Accountable contacts because the only reason to inform these actors was that they in turn inform the decision maker about the required decision, based on the information provided by the public project organization. These 'decision preparers' do not have a formal role in the decision-making process, but we found them to be important connectors between the project organization and the parent organization. They are important informal elements in the decision-making process. These actors can

be real bridges in the network, but also real showstoppers. Conscious positioning of these actors by the public project organization contributes to project success.

Finally we want to address an observation from the interviews. During the interviews, we got an insight into motives, personal perspectives, motivations and frustrations of the interviewees. Some people favor compromise and joint solutions, others prefer structure, arrangements and proper implementation. The preferences seemed to reflect their role or the role is in line with the personal preferences. People with a preference for structures, agreements and proper execution felt less comfortable in the project context. They experienced more negativity in their environment, and took that personally. In response, they are frustrated (*'they just don't get it'*) or passive (*'I am in charge of nothing'*). People with preference for compromise and joint solutions are mentioned positively by their colleagues in the project organization. People who feel comfortable in their role, appointed few negative influences from their contacts. And if they classify the relationship negative, then the effect is classified by them as a neutral effect. From this we suggest that individual motivation is an important element in the data of the cases.

## **6 Implications of the results**

In this study the focus is on data providing insight into the influence of the environment on the combined project organization. That the environment of the project is a factor to be reckoned is known from previous research (Bryde and Robinson, 2005; Bryson, 2004; McLeod et al., 2012). By asking for the reason, nature and impact of actors from the environment this study adds insights on how the surrounding actors interact with the public and private project organizations and influence the processes in the combined project organization. Kort and Klijn (2011) already put emphasis on the importance of decision-making in public-private partnerships. As the main purpose of contact with actors from the public parent organization is the need for a decision or approval (the actor is Accountable), this research shows that the decision-making process reaches further than the combined project organization.

The decision-making process is often studied within the organization. From the present findings, the dimension 'private project partner' should be added to decision-making process regarding project trade-offs. Jones and Deckro (1993) identified *authority bifurcation* as source of conflicts in matrix

organizations. According to Sy and Cote (2004) the ambiguity over decision rights leads to tension and conflicts, which causes delays in decisions and can have impact on the quality of the decisions. The current study shows that this ambiguity on the interface between parent organization and project organization affects the cooperation between partners in the combined project organization.

In addition, this study adds ‘the attitude of the project management team towards decision-making’ as important factor for successful public-private collaboration. The ‘competence of the project manager’ and ‘leadership’ are frequently mentioned factors contributing to successful projects (Crawford, 2005; Prakash Prabhakar, 2008b). Presented findings complement the competence as a success factor by addressing the influence of the project management team on decision-making processes. By positive and proactive positioning of their own role in these processes their influence increases. To do so, the public project organization should be organized at a certain distance of the parent organization and be able to act with (proportional) autonomy. Moreover it supports the needed transparency in the relationship towards the parent organization in the role of authorization institute.

In the line of competences needed in the project management team to enhance project performance ‘finding the right focus’ and ‘the relevant knowledge or experience needed’ are added. Previous research indicated that the educational background of the project manager is of influence on the perception of project success (Koops et al., 2016). This study demonstrates that the absence of the needed knowledge in the project organization causes inefficiency and delay. The organization of support in the parent organization by the public project organization is a major concern, especially in large projects. The fourth and fifth assertion point out the importance of clarity in the purpose of contacts and the importance of a network approach. These findings support the appeal of Winch and Leiringer, (2016) that project organizing by permanent owners has received too little attention (Winch and Leiringer, 2016). Further research into the perspective of the owner-operator role in project based organizations related to projects is necessary to develop new models that help people in this role and projects to focus on their contribution in the accomplishment of organizational goals.

## **7 Limitations and further research**

This study has some limitations in its results and conclusions. The first limitation is related to the research design applied and the characteristics of the data used. This study is set-up from an ego-centric approach and used the contacts that are mentioned by the interviewees. The results are based on the interviewee's answers and depend on the perception and memory of the contacts. Though we believe that the most important persons are indicated by the interviewees, future research can benefit from a Network Approach that uses digital resources to monitor contacts from all participants, including the directions. More connections from the project organization can be analyzed to complete the network and also the connection between contacts. Future studies on this quintain should include more projects. An interesting avenue for future study of this quintain is to use other data, like project reports, gate reviews and further available project information. We highly recommend future research should also include the personal subjective perspective which cannot be captured in reports.

The data obtained are limited by the memory and truthfulness of interviewees and their interpretation of the questions. Their subjective verdict on the nature or relationships can be influenced by the project phase, especially in case I and II where the project was recently finished. Although the interpretation of the interviewee is of value in order to reveal differences of viewpoints, future research on these findings can put more emphasis on the actual organizational structures and arrangements compared to the perceived structures and arrangements.

This research touches on the subject of power and politics in organizations and in particular in decision-making processes. The assertions are formulated to encourage the project organization to increase their influence on project performance. We started our research by mapping how information flows from actors in the system and by doing so we saw that besides the information, the framing of the information by the actor can influence the effectiveness of action. From this observation we recommend research into the motives of actions within the broader network surrounding the combined project organization, with a specific interest in increasing the effectiveness of project managers and project management teams.

Finally we reach out from the field of project management research to the field of organizational research. We expect this field to add useable knowledge to increase the effectiveness of the temporary

project organization. We recommend a discussion between these two scientific fields about the variables that make the difference between project and organization (if any), like budget, duration, number of people involved to name a few.

## **8 Conclusion**

The purpose of this research was to explore the influence of external actors, especially the public parent organization, on the combined project organization. The results show the effect of actions in the surrounding of the combined project organization. It puts great focus on the different connections a public project organization has with its parent organization and other public partners. It shows that clarity and a common view is needed in the approach of external actors, especially those that are Accountable. The addressed influences in this research are in line with the findings of Aarseth (2012) who mentions 'internal organizational challenges' and 'external contextual challenges', but the specific perspective of our research is important (Figure 1C). Although the mechanisms are similar, the positioning of these mechanisms from the perspectives of the combined project organization changes the concepts 'internal' and 'external'. Moreover the supposed 'internal' challenges are at least partly 'external' for the combined project organization and influencing the cooperative relationship between public and private partner. Different approaches of 'internal processes' become sources of tension and long lasting discussions between partners. The 'external' challenges are in fact internal challenges for the client-owner and operator-owner. The combined project organization has to learn how to operate within the existing equilibrium (LaPalombara, 2001). But most of all we believe that a more sustainable solution for these challenges should come from the organizational context of the public parent organization. Further research in this area is recommended.

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