THE LINK BETWEEN STAKEHOLDER POWER AND VALUE CREATION IN CONSTRUCTION PROJECTS

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ABSTRACT
This paper presents a study on what effect stakeholder power has on value creation in construction projects. Fourteen main sources of power in organizations, described by Morgan, form the analytic framework. The ambition is to identify 1) how the distribution of power between the main stakeholders is, 2) which sources of power are most common in a construction project organization, 3) which effect the sources of power have on value creation in projects.

The data is collected through semi-structured interviews. Experienced representatives from four main stakeholders in early phase of construction projects (owner, architect, design manager and project manager) were interviewed. The collected data through the interviews was coded, analyzed and linked to the literature study. The results reveals that 10 of 14 sources of power are identified as common sources of power in construction project organizations. Out of the ten, control of knowledge & information and formal authority are rated as the most influential sources of power. Apparently, all main stakeholders can possess these two sources. Rhetorical skills – which is not among the fourteen main sources described by Morgan – turn out to be an underrated and complex source of power.

The LCI triangle model suggests that all project delivery systems have three basic domains whining which they operate i) organization, ii) the project’s “Operating system” and iii) the commercial terms binding the participants. These are equally important and should be aligned for the system to be coherent. Power is one of the main elements in organizational affairs that effect transparency and decision processes. There is a knowledge gap in how the power can affect the processes in project organization and which effects it can have on the projects’ overall value creation.

KEY WORDS
Power, Organization, Value creation, Early phase, Rhetoric

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INTRODUCTION
This paper presents results from research on the link between power in organizations of construction projects and value creation. Although the concept of power has been subject to many definitions, a common notion is that power make things happen by influencing the behavior of another social unit (Loosemore, 1999). This influence can result in desired and undesired outcomes, both for the stakeholder exercising power and the one subdued to it. Consequently, the exercise of power can be both a challenge and an opportunity for stakeholders in construction projects. Eikeland (2001) stresses that improvements, either at the final product or in successful process, can result in value. Hence, the link between power in project organizations and value creation in the project needs to be understood.

Power in organizations has been a hot topic for researchers, especially within fields of management, over the last decades (Astley and Sachdeva, 1984; Daft, 2012; Engelstad, 2005; Ivancevich et al., 2011; Mechanic, 1962; Morgan, 2006; Pammer and Killian, 2003). Numerous researchers have conceptualized, defined and evaluated the effect of power in the organizations. Understanding the effect of power on value creation demands an understanding of value creation through project delivery systems. The LCI (Lean Construction Institute) triangle suggests that all project delivery systems have three basic domains within which they operate; i) the project organization, ii) the project’s “operating system,” and iii) the commercial terms binding the project participants (Thomsen et al., 2009). Integrated organization as a tool in lean construction requires transparency and reduces the significance of formal bindings between the participants. This might trigger the desire of certain stakeholders to use power to impose a desired outcome. It is therefore important to investigate how stakeholders use power to influence decisions. Equally, the sources of power to influence decisions needs clarification in order to address what is at stake. Such clarifications are crucial to increase transparency and, correspondingly, prevent the abuse of power. According to the literature study leading up to the research presented here, there seems to be a certain knowledge gap in the lean construction literature concerning the relationship between sources of power in integrated organizations and their significance for processes and value creation. This leads us to following research questions:

- How is the distribution of power between the main stakeholders in a project?
- Which sources of power are most common in a construction project organization?
- Which effects do the sources of power have on value creation in a project?

RESEARCH METHODOLOGY
Value, value creation and power are the major concepts addressed in this study. A literature review was conducted according to procedures described by (Blumberg et al., 2014) by reviewing other studies that are closely related to the topics power, value and value creation in order to acquire a good understanding of the theory concerning these concepts. The literature review investigated existing descriptions and definitions of value, value creation, power and sources of power in organizations in order to attain an overview of what has been discovered before within aforementioned concepts.
This paper is a result of linking the literature study and interviews with representatives for four major stakeholders in a construction project (architect, design manager, project manager and project owner). According to Samset (2010), these are the stakeholders that directly impel the project. The user is a stakeholder with significant importance in the projects. However, user groups are usually formed as one-time organizations, which makes it difficult to find representatives with experience from several projects. Hence, the user as a stakeholder has not been a part of this study but the significance of their power in is undeniable.

Data was collected through four semi-structured interviews. The interviews were audio recorded, transcribed and then coded by marks, notes and memos of topics according to the procedures outlined by Yin (2014). Each interview lasted approximately 1.5 hours.

**THEORETICAL BACKGROUND**

The discussions and pursuit towards defining value has been ongoing since the antiquity. According to Fleetwood (1997), Aristotle (4th century BC) was the first philosopher documented to have differentiated between two meanings; “use-value” and “exchange value”. The term “use value”, denotes how customers according to their needs perceive specific qualities in a product. Judgments concerning use value are therefore subjective of nature. Exchange value, on the other hand, refers to the price, that is, the monetary amount realized at a certain point of time when the exchange of the good takes place (Bowman and Ambrosini, 2000). Value and value creation have particularly been discussed in management and marketing literature during the last decades, especially since the 1980s (Zeithaml, 1988; Dodds et al., 1991; Holbrook, 1994&1999; Babin et al., 1994; Woodruff, 1997; Parasuraman, 1997; Kaufman, 1998; Kelly et al. 2015, etc.). Although different theories and research streams have been applied in different contexts to conceptualize “value”, one general insight is that the term coins the focus on the customers and users and their perception of value in relation to satisfying their needs (Haddadi et al., 2015).

Value creation in a project depends on the relative amount of value that is subjectively realized by a target user who is the focus of value creation – whether this concerns an individual, an organization, or society as a whole (Lepak et al., 2007). Various stakeholders in a project have different views on what is valuable. The difference stems from particular knowledge, goals, context and conditions that influence how the novelty of the value is conceived and evaluated by the respective actors. They may also have competing interests and viewpoints of what is valuable (Lepak et al., 2007). This difference can result in a divergence in what stakeholders define as valuable outcome and hence attempts to impose their own favorable outcome (exert power) to other stakeholders or party. The overall value creation in a project will hence depend on which stakeholder’s value has been in focus and in which degree it has been realized.

Power has typically been investigated as an independent variable in research design. It has been used to explain decision making in small groups, and for explaining moral and alienation in studies of work organizations (Hickson et al., 1971). Pammer and Killian (2003) describe power as “one party’s attempt to impose an outcome on the other party”.

**Section 1: Theory**
To impose an outcome can be envisaged in multiple forms, such as by brute force, legislative measures or – most significantly within the context of this paper – by rhetorical means. Aristotle – the foremost theoretician of ancient rhetoric – defines rhetoric as the faculty of discovering or observing the possible and available means of persuasion. According to him, modes of persuasion which strictly belong to what he mentions as “the art of rhetoric” has three divisions; i) power of evincing a personal character which will make the speech credible (ethos) ii) power of stirring the emotions of the counterparty or hearer (pathos), iii) power of proving a truth by arguments (logos) (Aristotle et al., 2014). Koskela (2015) argues that rhetoric is one of the fundamental aspects in management (in particular related to lean) by addressing elements like fundamental arguments in production management, compliance to plans, reinforcing common values, deliberating courses of action and inventing requirements and ideas.

“Sources of power” is extensively discussed and investigated in literature. There are numerous classifications, categorizations and definitions of sources of power. Despite the similarities, they address the issue in different ways. Some try to simplify the concept while others have more comprehensive categorization of sources of power (Astley and Sachdeva, 1984; Daft, 2012; Engelstad, 2005; Ivancevich et al., 2011; Mechanic, 1962; Morgan, 2006)

Morgan (2006) defines power as “...the medium through which conflicts of interest are ultimately resolved. Power influences who gets what, when and how”. He introduces 14 sources of power in organizations. Morgan’s categorization offers a comprehensive and explicit definition of the sources of power, which is highly applicable in construction project organizations. The categorization seem to cover a wide range of possible reasons for why a stakeholder should possess the ability or willingness to impose an outcome. Hence, the authors have evaluated this the most relevant reference to base this research on. The 14 sources of power according to Morgan (2006) are presented in Table 1.

Table 1: Morgan’s 14 sources of power (Morgan, 2006)

<table>
<thead>
<tr>
<th>No.</th>
<th>Source</th>
<th>No.</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Formal Authority</td>
<td>8</td>
<td>Control of technology</td>
</tr>
<tr>
<td>2</td>
<td>Control of scarce resources</td>
<td>9</td>
<td>Interpersonal alliances, networks, and control of “informal organization”</td>
</tr>
<tr>
<td>3</td>
<td>Use of organizational structure, rules, and procedures:</td>
<td>10</td>
<td>Control of counter-organizations</td>
</tr>
<tr>
<td>4</td>
<td>Control of decision processes:</td>
<td>11</td>
<td>Symbolism and the management of meaning</td>
</tr>
<tr>
<td>5</td>
<td>Control of knowledge and information</td>
<td>12</td>
<td>Gender and gender relations</td>
</tr>
<tr>
<td>6</td>
<td>Control of boundaries</td>
<td>13</td>
<td>Structural factors that define stage of action</td>
</tr>
<tr>
<td>7</td>
<td>Ability to cope with uncertainty</td>
<td>14</td>
<td>The power one already has</td>
</tr>
</tbody>
</table>

**FINDINGS AND DISCUSSION**

The results are mainly the interviewees’ answers to the inquired research questions.
DISTRIBUTION OF POWER IN A PROJECT ORGANIZATION

The interview objects were asked to describe how they see the distribution of power between the main stakeholders in Norwegian construction projects. As expected, there are some differences in how the distribution of power is perceived among the stakeholders.

Owner: All the interviewees mentioned that the owner is the stakeholder with the highest power although differences in exertion of the power by the owners occur. Some owners transfer the power to the project manager and the management team; some have a more “hands on” approach on their projects. The owner’s competences and knowledge is a decisive factor on how much power it actually has despite the formal authority. The owner representative mentioned that the owner has less power than presumed, especially in the public sector. Users’ needs are ought to be satisfied. This means that owner has less power in choosing solutions than users and architects. The owner’s real power (especially in the public sector) is in managing the project in terms of economy, schedule and quality. In private sector, the owner has more power for choosing desired solution.

Architects: There is an agreement that architects have far less power nowadays than they used to have some decades ago. Different execution models, more complicated technical facilities, higher degree of technical requirements, environmental issues and new regulations was mentioned as possible reasons. The fact that the project management has been professionalized during the last decades was also mentioned among reasons why architects have less power in projects nowadays. Despite reduced power, the architects are still one of the most powerful stakeholders in the projects because of their significant role in transforming owner’s requirements into functional description. Architects also feel a higher degree of ownership to the project due to the nature of their task, which is creation. This makes them more engaged in the projects and increases their willing to influence the project. They are consequently more willing to use the power sources that they are given in order to have an impact on the project they feel ownership towards.

Design team: Technical consultants have significant influence on value creation due to increasing complexity of technical facilities and more standardization and regulations. The recent focus on environmental issues has also increased the demand after technical personal in project organizations. The design team is a complex and vital organization within the project organization. Therefore, different roles and disciplines within the design team can exert power within the team as well as on the project in general.

Project management (PM): Project management here is defined as the professionals and consultants that are hired or engaged to lead the projects and are not employees of the owner organization. Interviews show that different stakeholder look differently into this stakeholder. PM role as an integrated part of the owner’s organization can be conceived as the owner’s operational level and thereby synonym with the owner. It means the PM takes decisions on behalf of the owner and therefore has almost the same power. On the other hand, this stakeholder can be perceived as a layer in the communication between the design team, architects and the project owner where there is a clear line between the
owner and PM team. Being the owner’s operational hand and a communication layer between the design team, architects and owner gives this stakeholder a massive power.

**COMMON SOURCES OF POWER AND THEIR EFFECTS**

Morgan’s (2006) 14 sources of power is a comprehensive classification of the sources of power and used as baseline for this research. The research shows that not all 14 sources can be recognized as significant sources of power in Norwegian construction projects. The ones that seemed familiar to the interview objects were following:

**Formal authority:** Is a form for legitimized power that can consist of charismatic authority, traditional authority, and rational-legal authority and one of the most discussed sources of power during the interviews. Formal authority is given through deals, contracts, laws and regulations. Although the project owner is at the top of the organization map and has the highest formal power, the owner distributes the responsibility and risk down to mainly two stakeholders, the architect and the design team. The PM receives mainly formal authority with almost no risk and no legal responsibility. PM has however a moral responsibility and integrity to deliver the project within the criteria which are agreed upon. The architect is normally the one with the overall legal responsibility for securing the fulfilment of the regulations, laws and required documentations to the building authorities. The design team is responsible for delivering the functional solutions according to descriptions, laws and regulations. Although contracts are signed and knowing the content of the contracts, as the PM representative mentioned, is considered as a necessity, the stakeholders seem to be cautious with implication of power because of formal authority. It is difficult to manage the projects through contracts according to the owner representative. In most of the projects, there are minor breaches of the contract from both parts. Goodwill in solving the conflicts is a necessity. Changes happen throughout projects and sanctions are not used unless they are necessary since the consequences can be huge for the projects.

**Control of scarce resources:** Is defined as control over resources such as money, materials, technology, personal and suppliers that the organization depend upon. Geotechnical engineers has been mentioned as an example of a scarce resource in Norwegian construction projects nowadays. Scarcity of resources is considered as a challenge for value creation and not a common source of power used in the projects.

**Control of decision processes:** Ability to influence decision premises, processes, and decision issues and objectives. Normally controlled by the owner. According to the owner’s representative, it is positive for value creation that the owner can control these processes. The mandate for decisions is usually based on how much the decision is going to cost the project. However, the following consequences, which are not the direct cost for the decision, can be underrated or even forgotten. This can affect the value creation negatively. Hence, a stakeholder with overall view on the project should possess this source.

**Control of knowledge and information:** Involves systematically influencing the definition of organizational situation and creating patterns of dependency by controlling knowledge and information. All interviewees stressed the importance of knowledge and information as a source of power in projects. People who have been in the project for a
The link between stakeholder power and value creation in construction projects

long time, PM who has the overall view, consultants with special competences and experienced architects are all mentioned as examples of the powerful participants in a project where the power is provided by knowledge and information. Easy access to internet and information online has reduced the power provided by general information. At the same time, it has contributed to higher power to specialists, consultants and experts.

**Control of boundaries:** Represents monitoring and controlling transactions across boundaries by performing a buffering function that allows certain transactions while blocking others. This source of power is close to the previous one. Control of boundaries becomes a source of power by controlling the information flow between the groups. This is not considered as a big issue in Norwegian projects but using this source of power means limiting the information flow between groups and reducing transparency, which generally has a negative effect on value creation.

**Ability to cope with uncertainty:** Is defined as the ability to cope with the external influences that affect the project such as market situation, finance, raw materials etc. and/or the internal influences such as machinery break down, use of new methods, technology etc. Ability to cope with uncertainty is a source of power especially if it results in higher decisiveness. How uncertainty is managed and how the risk is distributed in projects varies. Hence, this source of power is ambiguous for the interviewees. However, better decisions will contribute to higher value creation and risk and uncertainty should be placed where it can be handled best.

**Control of technology:** The technology employed in a project provides the ability to achieve better results in productive activities, and it also provides an ability to manipulate this productive power as a source of power. This has mainly been related to two types of technology, BIM (Building Information Modelling), and technical instruments and facilities. Possessing the ability to use BIM is considered as a skill but this has not been experienced as a source of power in projects. Using BIM contributes, among others, to better transferring of information and has a positive contribution to value creation. Control over complicated facilities is considered as a power source that can have a negative impact on value creation. If one or a few suppliers has the technology to deliver a certain tool or facility, they have the power to price or affect other relevant facilities. This can reduce the options for the solutions and derby effect the value creation negatively. The same is valid for people who have good skills of programming or using technological devices.

**Interpersonal alliances:** Throughout different networks, individuals can develop interpersonal relations and exert various forms of interpersonal influence to shape the decisions in a project based on their interests. Although some practitioners stress the importance of project staff knowing each other for better communication, there has been unfortunate examples of using interpersonal alliances as a source of power in Norwegian construction projects. The Norwegian construction industry is relatively small, meaning people happen to meet each other or work together and establish a personal or/and professional relationship. Although people seem to be aware of this fact and act deliberately, it can, at its worst, cause corruption and difficult situations for the project.
**Control of counter organizations**: Involves a group of people that manages to build a concentration of power in a relatively few hands and coordinate their action to create a rival power. Control of counter organization is also a source of power that can affect the value creation. However, its effect can be both positive and negative depending of what the counter organization’s intentions are. Organizations with the right to get involved, like unions that are taking care of the people’s rights, can contribute to value creation by influencing the project to satisfy the needs for a larger group of people. Interest organizations, which are protecting interests and not rights, can have a negative effect on value creation in a project, especially if they represent minor concerns.

**Gender and management of gender relations**: Is defined as gender-related issues that bias organizational life in favor of one sex over another. This source is culture-related. Although none of the interview objects considered this as a problem in Norwegian projects, the authors believe that this is a tabooed topic. That might be the reason why no one considered gender related power as a problem.

**CONCLUSIONS**

Regarding the first research question, the distribution of power can vary between projects due to factors like the circumstances, complexity, owner and user involvements, management methods etc. However, there is a consensus in how the distribution of power is conceived by interviewees.

With reference to the second research question about common sources of power, the research has revealed that out of Morgan’s 14 sources of power, only 10 are recognized as common sources of power in Norwegian construction projects. Sources that are not mentioned are either not acknowledged by the interviewees as a source of power in Norwegian projects, or are considered as a following consequence of another source of power. For example, “Use of organizational structure rules, regulations and procedures” can be a result of other sources of power like “Formal authority”, “Control of the decision processes” or “Control of boundaries”. “The power one already has” as a source of power to get more power is dependent on individuals and cannot be considered as a general challenge for construction projects. The same argument applies to “symbolism and management of meaning”. This brings us further to the discussion on rhetorical skills as a missing source of power on Morgan’s list.

Regarding the third research question about the effect of the sources of power on value creation, all interviewees stressed the importance of “control of knowledge and information”. Control of knowledge and information is considered the category with highest effect on value creation in projects. The research reveals that “Formal authority” is also a critical category. The effect of the “Formal authority” as a source of power equally indicates the importance of another domain of the LCI triangle (Commercial), which is the agreements and commercial terms between the participants. With a more open agreement form where everyone is responsible for project success, the effect of formal authority as a source of power is less than non-integrated organizations. This will also reduce formal power relation’s ability to limit the possibilities of underdog parties to present their knowledge. All sources of power can be abused and have a negative effect...
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on the project and value creation. Table 2 summarizes the effects of the sources of power on value creation assuming that the source of power is not intentionally abused.

Table 2: Distribution of the common sources of power, and the effect on value creation

<table>
<thead>
<tr>
<th>Source of power</th>
<th>Importance</th>
<th>The effects on value creation</th>
<th>Stakeholders who possess the source of power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control of knowledge and information</td>
<td>High</td>
<td>Knowledge is appreciated and those with knowledge have the opportunity to influence. Positive for value creation</td>
<td>Owner, PM, Architect, Design</td>
</tr>
<tr>
<td>Formal Authority</td>
<td>High</td>
<td>Positive when it clarifies the roles and mandates in a project. Negative if the power and responsibility is not aligned.</td>
<td>Owner, PM, Architect, Design</td>
</tr>
<tr>
<td>Control of decision processes</td>
<td>Medium</td>
<td>Good control of decision processes will shorten the decision time and have a positive contribution on value creation.</td>
<td>Owner, PM</td>
</tr>
<tr>
<td>Control of boundaries</td>
<td>Medium</td>
<td>Using this to organize the project with proper information flow and good cooperation will have a positive effect on value creation.</td>
<td>Owner, PM, Architect</td>
</tr>
<tr>
<td>Interpersonal alliances</td>
<td>Medium</td>
<td>Reduces transparency and gives the power to minority. Negative effect on value creation.</td>
<td>Owner, PM, Architect</td>
</tr>
<tr>
<td>Control of technology</td>
<td>Medium</td>
<td>Stimulates innovation and new thinking. In that case positive. Negative for value creation if it ends up in a monopoly situation.</td>
<td>Architect, Design</td>
</tr>
<tr>
<td>Control of counter organizations</td>
<td>Medium</td>
<td>Positive if they protect rights. Negative if they represent minor interests.</td>
<td>External</td>
</tr>
<tr>
<td>Coping with uncertainty</td>
<td>Medium</td>
<td>Can lead to better decisions. Positive for value creation.</td>
<td>Owner, PM, Architect, Design</td>
</tr>
<tr>
<td>Control of scarce resources</td>
<td>Low</td>
<td>This is rather a challenge for value creation than a positive or negative contribution</td>
<td>Architect, Design</td>
</tr>
<tr>
<td>Gender and gender relations</td>
<td>Low</td>
<td>Culture-related. In Norwegian projects, this is not considered as a factor related to value creation.</td>
<td>Owner, PM, Architect, Design</td>
</tr>
</tbody>
</table>

Results reveal that more democratic organizational models that promote transparency, like IPD, can improve value creation in a project. This can be related to both the Organizational and Commercial sides of the LCI triangle. By more democratic organization models, formal authority will not interfere with the flow of information and knowledge. As a result, the control of boundaries and decision processes will have reduced effect as sources of power.

It is of interest that Morgan’s classification does not include rhetoric as a separate source of power. This might be because the engineering disciplines are still strongly positivistic in their approach to human behavior. Within the context of rhetoric, this typically comes out as a firm belief in the impartial power of pure argumentation. Contemporary philosophical analyses, in particular the postmodern (Derrida, Deleuze, Foucault, etc.), typically express a deep skepticism to such idealized representation of argument as corresponding to inherent qualities of the life-world. Rather, in such thinkers, rhetoric is revitalized as expressing a necessary part of understanding how the world actually functions. Little research has been carried out to determine whether the influence of rhetoric is powerful enough to be established as a 15th source of power in classifications such as that of Morgan’s. Further research is necessary to understand

Section 1: Theory
power dynamics and the influence of it on value creation in particular within Lean Construction.

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