PROJECT PERFORMANCE - AN EMERGING CONSTELLATION OF MULTIPLE INSTITUTIONS

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Project performance is often conceptualised as a few quantitative and disjointed parameters, like the classical time, cost and quality triangle, or the balanced scorecard's four fragmented dimensions. Rarely, is sociological theory mobilized to appreciate the complexity of a project's performance. However, a design-build project's performance can be conceptualized through the lens of institutional work and as a result, be understood as an emerging constellation of multiple institutions. To understand potential relationships between institutional processes and project performance, an ex-post study was conducted of two completed design-build projects. The ex-post study was based on interviews carried out with key participants from the two design-build projects. While each project developed multiple relationships between institutions over the course of the project, the projects were characterized by particular constellations of institutions which we denote 'settled domination' and 'conflict and competition'. Settled domination resulted in project performance that pre-dominantly satisfied the dominant institutions while project participants expected and more-or-less accepted that remaining institutions were compromised. Conflict and competition resulted in project performance characterized by a mix of compromised and uncompromised institutions. Overall, the two projects show that project performance is an emerging qualitative concept that gradually settles during the aftermath of the building phase.

Keywords: project performance, institutional process, institutional work

INTRODUCTION

Within management research projects are often framed as unique and uncertain and studied from a functionalist perspective. As a result, project performance is understood as execution-oriented: concerned with how to deliver buildings on time and on budget (e.g. Flyvbjerg 2010) and managing risk and uncertainty (e.g. Winch and Maytorena 2010). However, a number of important contributions highlight how projects are significantly institutionalized and as a result, project process as well as outcome varies little from project to project (Kadefors, 1995). Contending that design-build projects are social structures developing through social processes, project performance becomes less a matter for managed uncertainty and activities, but rather managed shared meanings, interests, norms and values. Institutional analysis is well suited to conceptualise this as stabilized institutions interact with processes of institutional work, changing and developing institutions (Lawrence \textit{et al.}, 2009). However, only few studies have been

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found that specifically define and elaborate project performance as an institutional concept (exceptions include Mahanlingam 2005 and Rasmussen et al., 2017).

In an attempt to get a deeper insight into the phenomenon of project performance and move beyond relatively reductionist definitions, the following research questions have inspired the research presented in this paper:

RQ 1: How does institutional work during the design-build processes relate to project performance?

RQ 2: What characterises a high performance project?

The research contribution is a commencing of conceptualising performance in an interpretive sociological manner. Institutional theory is well suited to perform such an enrichment. Two constellations of performance is thus empirically identified; 'settled domination' and 'conflict and competition'.

INSTITUTIONAL WORK

To understand how emerging design-build processes evolve into a temporarily stabilized order i.e. project performance, inspiration is drawn from recent streams of sociological institutional theory, in particular institutional work (Lawrence et al., 2009). Institutional work, seeks a balanced view of agency and structure: while appreciating, that structures can indeed structure interaction, agency is interpreted as being reflective, politically savvy, and motivated to create, maintain and/or disrupt institutional arrangements for the purpose of furthering the interests of individual organisations (Lawrence et al., 2009). Suddaby and Greenwood (2009:176) propose the following definition: 'an institution may take the form of juridical regulations, informal rules or codified social arrangements, norms of conduct, or cognitive structures that provide understanding and give meaning to social arrangements.'

Initial contributions on institutional work are not explicit about the number of institutions that actors can purposefully attempt to change (Lawrence and Suddaby 2006; Lawrence et al., 2009). However, it is recognised that organisations operate within a sphere of multiple institutional logics (Thornton et al., 2012); have to satisfy pluralistic institutional demands (Kraatz and Block 2008); are faced with complexity arising from the existence of multiple institutions (Greenwood et al., 2011); and, that multiple institutions can coexist in organizational fields (Zietsma and McKnight 2009; Greenwood et al., 2010; Lounsbury 2007). Specifically, Goodrick and Reay (2011:403) developed the term 'constellations' to denote the co-existence of multiple institutions arranged 'in a recognizable pattern'.

Numerous contributions have shed light on the relationship between institutions: how a single institution can dominate another institution (e.g. Suddaby and Greenwood 2005); how a single institution can dominate other institutions (Gestel and Hillebrand 2011); how two institutions compete for dominance (e.g. Greenwood et al., 2011); how multiple institutions compete for dominance (Goodrick and Reay 2011); multiple institutions can be conflicting and/or contradicting (Jarzabkowski et al., 2013); how proto-institutions (i.e. institutions in the making) compete for legitimacy and dominance over established institutions (Zietsma and McKnight 2009); how institutions can co-exist relatively peacefully (Gestel and Hillebrand 2011); institutions can be cooperative, complementary and mutually re-enforcing (Goodrick and Reay 2011; Greenwood et al., 2010; Jarzabkowski et al., 2013); and, institutions can blend, recombine, assimilate and coalesce to form one dominant institution (Zietsma and McKnight 2009; Thornton et al., 2012).
Importantly, multiple types of relationships can characterise a number of institutions simultaneously creating a potentially complex constellation of institutions (Goodrick and Reay 2011).

Due to the potentially complex relationships between multiple institutions, institutional work processes are incremental change processes and less likely to be clearly predefined transformational ones (Gestel and Hillebrand 2011).

Since multiple organisations collaborate in design-build projects, institutional work can be characterised as ongoing negotiations between multiple different political and professional interests, values, norms, cultural cognitive understandings and rules (Yu 2013). These negotiations can be characterised as integrative processes (Yu 2013) where established and proto-institutions are negotiated and pursued on a more-or-less experimental basis (Zietsma and McKnight 2009). As a result, the integrative process is characterized by repeated and concurrent resistance and mutation (Lawrence et al., 2009) that gradually settles into a constellation of institutions even if only temporary stabilized. This, project performance can be more-or-less intended (Gestel and Hillebrand 2011).

All in all, the use of institutional theory is multi-level: on the one hand we understand the design-build collaboration form to represent an institution in itself; on the other hand, we observe that during the design-build project multiple institutions contributing to the making of the project develop. This occurs predominantly, but not exclusively through the different professions and authorities contributing to the making of the project develop. However, it is in particular the latter understanding that this paper applies to developed project performance as an institutional concept.

**METHOD**

The research presented in this paper is extracted from a Ph.D. study concerning coordination and project performance of design-build projects in Denmark. At first, the study of project performance was intended to be quantitative, but during early research stages, it appeared, that performance numbers were fabricated numbers reflecting political and pragmatic negotiation of the institutional order of the project. Therefore, performance numbers were ambiguous to measure and instead more appropriately required interpretation. Hence, a qualitative research design was selected.

Furthermore, in order to study potential relationships between institutional processes during the design-build phases and a project's performance, an ex-post study was chosen in order to be able to capture recently processes as well as the finished building itself and project aftermath processes. Originally, six ex-post studies were conducted; however, to limit the scope of this particular paper, two cases of particular interest were selected. Two projects differing in performance were selected to emphasise that different constellations of institutions do indeed result in different project performance.

<table>
<thead>
<tr>
<th>Ownership</th>
<th>Typology</th>
<th>Size, m2</th>
<th>DB duration, months</th>
<th>DB cost, m. Euros</th>
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<tbody>
<tr>
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<td>32,000</td>
<td>36</td>
<td>160</td>
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<tr>
<td>Private</td>
<td>Residential</td>
<td>23,000</td>
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Reflexive interpretation (Alvesson and Sköldberg, 2009) was used as analysis method as it enables insight into context related social processes. The term 'reflexive' refers
Specifically to interpretation of the empirical material at four different levels (e.g. the empirical material itself based on grounded theory; underlying meanings based on hermeneutics; ideology, power, social reproduction based on critical theory; and, the researcher's own (con)text, claims to authority and use of language based on post-modernism) (Alvesson and Sköldberg, 2009: 7-10, 273).

Suddaby and Greenwood (2005) specifically highlight interpretive methods' superior ability to give insight into highly complex and interwoven levels of institutional analysis, for example, meaning and structure. To that, Pettigrew (1986) recommends using longitudinal methods to capture institutional processes. The two design-build projects lasted around three years each, and while this is relatively short compared to longitudinal studies that may span decades, it nevertheless does represent the life-span of the design-build project (not the building itself) and is thus interpreted to cover the entire institutional process in question.

In total 7 people were interviewed for the two design-build projects. Each interview lasted two hours. First, an open-ended interview with the contractor's project manager was conducted to get an initial understanding of the project and its context. Subsequently, the architect's project manager, the engineer's project manager, the owner's project manager and the contractor's design manager were interviewed. The interviews were carried out as a combination of semi-structured and open-ended interviews. This combination enabled the interviewer to "drill" into the topics and the interviewee to elaborate on events of particular interest and value.

During the interviews the interviewer and interviewee would jointly develop a process map covering events from early project idea through hand-off, commissioning and occupancy. The process map facilitated a joint understanding of the project process, as well as facilitated the interviewee remembering past events that to various degrees were either vague or post-rationalised memories. Site visits were also conducted at each of the two completed buildings. Although no formal tour of each project was given an informal nose around was conducted. The site visits, in conjunction with the interviews, provided the opportunity to understand how constellations of institutions during the design-build process were reflected in the final building.

INSTITUTIONS AND PERFORMANCE IN TWO DESIGN-BUILD PROJECTS

Project A

Characteristic Constellations of Institutions in Project A

Project A was characterized as a ‘typical’ design-build project by project members. At conception, the project was planned as an extension and replica of an existing building in order to increase efficiency and reduce design costs while maintaining a particular level of quality. During the early and basic design phases the architect and engineers worked on preparing a brief in what was interpreted to be integration among collaboration, quality, designing efficiently, and cost optimization. Then, a two-month long negotiation period occurred, and eventually a design-build contract cost was established. At that point, the contractor entered the project team and hired the owner’s architect and engineering consultants. Due to underestimation of the complexity of the technical details, the detailed design phase was extended past 6 month and the building phase postponed for six months to enable the project team to coordinate the design project for construction. Gradually the contractor’s pursuit of short-term economic gains began dominating. For example, during the project cost negotiations it was suggested that a
potential 6m. Euro could be saved by purchasing a number of materials from Southeast Asia. The owner and the contractor agreed that this was worth pursuing and a formal agreement to purchase materials was established. Also the architect was fiscally incentivized to pursue cost savings. As the detailed design phase progressed, Project A became characterized by ambiguous domination: conflicting demands imposed on the project caused ambiguity to the architect because they accepted compromising architectural quality of the design solutions in order to maintain collaboration, loyalty, and increase project cost savings.

Furthermore, as the detailed design and build progressed the owner made several major changes to the original project, which increased the cost of the project. The contractor covered the increased project costs with the savings from the purchase savings from Southeast Asia. This meant that the owner’s accumulated savings were reduced from an anticipated 6 m. Euros to 0.3 m. Euros. The contractor justified their actions by claiming they saved a number of work processes, however, the owner was left with a perception of having paid full price for poor quality. Nevertheless, the owner’s representative expressed a certain ambiguity about the contractor: on the one hand, he thought the contractor was ‘bending the rules’ to accommodate their own interests; and, on the other hand, he perceived it to be ‘part of the game’.

Performance of Project A

The project was originally scheduled to be handed off to the owner in March 2011, however, the contractor negotiated an additional six months due to increased project scope. The building phase was described as ‘uneventful’ by the contractor who, nevertheless, was able to optimize and accelerate the building process and reduced the building period with six months, equally. Before the building was handed off in March 2011, the owner and contractor negotiated and settled on a premium that the owner paid for receiving the building six months prior to the negotiated schedule. Although the contractor justified their actions by referring to the juridical provisions for design-build projects, the owner was once again left with a sense of fundamental distrust towards the contractor: a sense that the contractor was ‘greedy’.

Once occupying the building, the owner’s project manager complained that the building required extensive maintenance and repairs within the first year of occupancy and that the building solutions ‘didn’t look good’. Also, the architect expressed disappointment with the final quality of the building and said the process was ‘frustrating’ and ’stressful’. On the other hand, the contractor was able to accelerate work and hand-off the building six months prior to the negotiated deadline and increase their profit by covering additional project costs with the savings from cheap material purchases. Within the contractor’s organization Project A is perceived as a success. However, the analysis shows that not all institutions were satisfied and thus the project is not unequivocally successful.

Project B

Constellations of Institutions in Project B

Project B concerns the design and build of a large apartment building for a private investor. The project was developed in collaboration with a prominent architect consultant who had won the project by competition. During the project development and early design phase, where relatively few actors were engaged in the project, the constellation of institutions is interpreted to have been relatively settled: quality and functionality dominated.
Once the architect and owner had developed the basic design for the building a number of contractors were invited to bid on the project. Once the contractor was awarded the project, at the beginning of the detailed design phase, the constellation was disrupted with the institution of the pursuit of short-term economic gains and the urgency and determination of the build. However, the institutions of quality, cost optimization and collaboration did not cease to exist as the architect continuously appealed to the contractor to, for example, increase the quality of the materials or hire sub-contractors based on their ability to deliver the specified product instead of the cheapest product. However, the contractor wanted to maintain the domination of short-term gains, in order to ensure their own profit. To avoid having the architect disrupt the constellation and jeopardize the contractor’s ability to build within the project cost and without delays, the contractor acted increasingly autonomously. For example, the contractor did not establish a joint project office and the architects were not hired for project inspections or invited to participate in project meetings during the building phase.

While the contractor was expecting to manage the project relatively autonomously the architect had the understanding that a certain level of quality was required in the project. Therefore, the architect continuously challenged the contractor and owner’s decisions. For example, the contractor dismissed the architect’s design manager when she warned, that according to her experience, the façade supplier would not be able to deliver the required quality of work. As a result, according to the project team, the collaboration between in particular the architect and contractor was poor and characterized by verbal fights and deep frustration.

During the building phase the lack of coordination disrupted the project by stopping and delaying work on the building site. Specifically, rework on the steel beams, concrete slabs, balconies, the bankruptcy of the façade supplier are all examples of how poor coordination during the detailed design phase disrupted the project during construction and compromised building efficiency and economic gains. Towards the end of the building phase the urgency and determination to build continued to dominate. In order to meet the final deadline, the contractor accelerated the building process. As a result, the different trades were working simultaneously and working conditions and quality of work became subordinate to finishing to a particular deadline. Overall, the design-build process was characterized by institutions competing for dominance and conflict between institutions that could not be simultaneously be satisfied.

Performance of Project B
The ongoing competition and conflict among institutions resulted in most institutions not being fully satisfied: residents complained over the poor quality of materials, the lack of heating capacity to enable the required indoor climate, and many errors and deficiencies pertaining to the interior finishes. Also, the contractor’s fee eroded and no profit was made on the project. On the other hand, a building was constructed, handed-off and occupied to the original deadline and the building is perceived as an architectural showpiece representing a landmark in its neighbourhood. In the contractor’s organization Project B is celebrated as a success partly due to the architectural and public prominence surrounding the project.

RELATIONSHIPS BETWEEN INSTITUTIONS AND PROJECT PERFORMANCE
First of all, the analysis showed that there is a potential correlation between the characteristic constellations of institutions during the design and build processes and the projects’ successful integration of institutions at project hand-off and during subsequent
occupancy, commissioning and facility management. It can be argued that both projects were dominated by the understanding that the building must be completed, since both projects delivered a finished building regardless of the circumstances of the design and build processes. Therefore acknowledging variation in constellations of institutions is fruitful to understand variation in project performance.

In project A, the poor quality of materials and extensive repair and maintenance work on the building in project A, reflects on the domination of the pursuit of short-term economic gains and the subordination of the institutions of collaboration, architectural quality and functionality. To that, the owner developed a sense of disappointment with the project performance when maintenance and repair work was required during the first year of occupancy, however, during the design-build process had fully supported the idea of pursuing cheaper building products. Also, the owner had originally awarded the contract to the particular contractor based on a combination of trust, knowledge of pre-existing buildings on site and price. However, due to the contractor’s continuous and unambiguous pursuit of cost savings, the owner gradually grew distrustful of the contractor and felt they had had been cheated. As a result, project performance is interpreted to have emerged as a more-or-less stabilized constellation of institutions reflecting domination of a particular institution.

Project B was characterized by conflict and competition and interestingly all the organizations expected that the institutions that they represented respectively, would, ultimately, dominate the project. However, competition implies either a draw or a winner and a loser: the result of the competition and conflict in project B is interpreted to have been a mix of satisfied institutions (e.g. the building has become an architectural landmark and the project was handed off to the deadline) and unsatisfied institutions (e.g. poor quality of materials, the dissatisfied residents, the insufficient heating systems, damages to the interior walls caused by the overlapping trades, the bankruptcy of the façade supplier, and the lack of profit for the contractor). In other words, the final building and the aftermath of the project reflect an on-going battle for dominance within the project team.

Project Performance as a Mix of Intended and Unintended Consequences

The paradox between being placed in relation to a single institution and a constellation of institution pertains to the discussion on intended consequences versus unintended consequences (Lawrence et al., 2009). Institutional work concerns purposeful actions aimed at creating, maintaining or disrupting institutions (Lawrence et al., 2009) and while recognizing that actions have consequences that can be either intended or unintended, institutional work is explicitly not concerned with the consequences of action. However, design-build projects have a relatively clear purpose (albeit sometimes poorly defined and continuously negotiated and changed): the development of a building that satisfies a number of institutions.

As a result, on the one hand the project team has an interest in managing the integrating constellation of institutions in order to increase the amount of intended consequences in order to stabilize project performance. On the other hand, project performance can be defined as a combination of intended and unintended consequences of institutional work carried out during the design and build processes. Contending that the current constellations of well-established and proto-institutions on design-build projects result in a paradox between efforts aimed at single institutions and efforts aimed at the constellation of institutions, then project performance is a result of intended and unintended consequences. While no literature was found on institutional work processes
and organizational performance explicitly, previous contributions on institutional processes frame temporarily stabilized institutional arrangements as ‘negotiated orders’ (Yu, 2013). In accordance, we previously defined project performance as a temporary stabilization of the constellation of institutions reflecting a particular negotiated order. The analysis of projects 2 and 4 showed that project performance was a negotiated order of proto-institutions and institutional debris. For example, the pursuit of cheaper products form South-East Asia is considered a relatively novel experiment supporting a well-established institution (e.g. pursuing short term economic gains), while the joint project office is interpreted to be a relatively novel practice supporting the understanding that collaboration among project team members is important for project coordination.

**Project Performance is Relatively Stable, Yet Subject to Variation**

The process of negotiating, experimenting, competing, fighting, collaborating, and doing what they perceive to always have been doing, closely resembles the integrative processes of co-creating institutions (Zietsma and McKnight, 2009). While the integrative process among multiple institutions in a field (Zietsma and McKnight, 2009) was described as a process that doesn’t follow a particular path (although bearing traces of institutional debris), projects A and B suggest that constellations of institutions in projects develop according to certain patterns. To recap: peaceful co-existence characterized the early and basic design phases, but was gradually eroded by the perception of a value-chain, the pursuit of short-term economic gains, late changes, and lack of institutional leadership that fragmented the constellation of institutions and was repeated across the two projects. The lack of integration among institutions during the early and basic design phases resulted in a conflict during the detailed design phase between means to increase project quality and understanding coordination as a means to enable efficient building processes.

During the building phase the institution of the build dominated either more-or-less autonomously, or in competition and conflict, or in collaboration with remaining institutions. And in the transition to occupancy, both projects struggled to integrate all institutions (e.g. product deficiencies; poor quality of materials; and fee erosion). In other words, the analysis of projects 2 and 4 suggests that while actors negotiate, experiment, compete, fight, and collaborate, they to some degree reproduce the same intended and unintended consequences from project to project. This supports the findings of Kadefors (1995) who showed that projects vary little in process and outcome. On the other hand, the two project teams created different constellations of institutions and projects that performed differently. This is attributed partly to institutional work albeit it being sporadic, short lasting, and mostly initiated by individual organizations or their members in each of the two projects. And to that end, and more broadly speaking, until projects succeed in collectively, reflectively, purposefully and continuously integrating constellations of institutions, projects are interpreted to remain at a time similar and different.

**CONCLUSIONS**

Responding to the RQ1, Project performance was interpreted here as an emerging social and qualitative concept. Therefore, theory on institutional work was selected to describe: first, how multiple organisations negotiate their interests, cultural understandings, values, norms and rules during the design-build process; and second, how project performance can be interpreted as the temporarily settled institutional order emerging from the design-build process. In order to gain insight into project performance interpreted as the result of an institutional process, a reflexive interpretive method was chosen. Furthermore, to understand the relationship between the design-build process and the settled constellation
of institutions, two ex-post studies were conducted on recently completed projects. Specifically, interviews with project participants and site visits to the completed projects were conducted.

Design-build processes were characterised as integrative processes through which organisations negotiated their interests, cultural understandings and norms by way of collaboration, competition and conflict. While each project developed multiple relationships between institutions over the course of the project, the projects were characterized by particular constellations of institutions. The analysis showed that domination resulted in project performance that predominantly satisfied the dominant institution. Furthermore, the analysis showed that conflict and competition resulted in project performance that mostly failed to fully satisfy any of the institutions. Second, project performance is defined as a phase at the transition from building phase to continued commissioning, hand-off and occupancy. While the transition itself represents a change in the constellation of institutions, the building itself and the time immediately following the transition also mark a temporarily stabilised constellation of institutions and thus project that performance is an emerging qualitative construct that gradually settles during the aftermath of the project. Finally, responding to RQ2 a high performance project is interpreted to be one that, as the aftermath of the project settles, successfully integrates the institutions represented in the project. These institutions include both the specific interests of the individual organisations represented in the project team as well as larger societal interests emerging from the project context.

REFERENCES


