STUDYING CULTURAL ISSUES: THE IMPLEMENTATION OF FACILITATED PROCESS-ORIENTATED COOPERATION

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Movements advocating lean construction and other initiatives based on improving production and cooperation have gained momentum. Similarly the construction business is faced with broad support for closer and less rigid working relationships within the supply chain. This is set against the dominating subcultures anchored within individual trades and professions that appear to constitute a barrier to the adoption of process-orientated forms of cooperation. As part of a pilot study for an ongoing Ph.D. study a large construction project in Denmark was monitored, observing and subsequently analysing the actions of the members of a contracting organization in the process of implementing process facilitation. The ethnographic research was instrumental in helping to illustrate the disparity between intention, current norms and culture. Despite broad understanding of, and support for, the new production and cooperation principles the members of the project organisation failed to make full use of the techniques applied. This appeared to be the result of a mismatch between overall aims and various cultural interpretations of procedures. The research was also useful in identifying some of the softer issues surrounding the implementation of lean tools and methods and was instrumental in helping to shape the ongoing doctoral work, which is investigating the interaction between (lean) design and construction.

keywords: Cooperation, process facilitation, culture, lean construction, social systems.

INTRODUCTION

The construction sector’s productivity rates are generally considered to be unsatisfactory, prone to complaints about product quality, customer satisfaction and the lack of project predictability and a poor reputation for innovation. The construction sector has long been subject to lower productivity growth rates than other sectors (DST 1999, Egan 1998). This implies that the planning and realisation of buildings should be improved. Management techniques have been borrowed from other industries (mainly mass production) and applied without any real consideration for the complex relationships inherent in the realisation of a built artefact. Although the industry likes to use new terminology it has been argued that very little has changed structurally (Cox & Ireland, 2002). Several factors help to explain this. For example, the ‘lock-in’ situation in which the sector appears to be ‘stuck’ (BBM

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2000a), a high degree of complexity and individuality of construction projects, the large number of different people, functions, responsibilities and companies involved etc. collectively contribute to the difficulties of managing construction processes (BBM 2000b). There is, however, an increasing critique of traditional production systems and growing desire within industry to change the planning and execution of work tasks. New forms of cooperation, such as partnering, alternative ways of subcontracting, direct involvement of suppliers etc. are becoming increasingly popular and are often implemented along with more concrete planning and management tools. Based on a case study from Denmark this paper introduces the issue of organisational culture and subcultures in connection to implementing a process-orientated cooperation model in construction.

PROCESS-ORIENTATED COOPERATION

For companies involved in the management of construction projects de-fragmenting the project processes is not an easy task. Construction is technically and organisationally complicated and involves many different companies, professional disciplines and individuals, many with different relations and interests concerning the individual project. Procedures for working and cooperating are coloured by economic concerns as well as social and cultural factors. Additionally the construction sector is subject to comprehensive regulation by public authorities and in many countries also to collective agreements by unions and professional bodies. One example of a ‘direct’ approach to orientating project cooperation around construction processes is lean construction, currently subject to heavy promotion in e.g. Denmark. One example of an ‘indirect’ approach is the partnering philosophy that aims to establish incentives for project partners to pursue common objectives in construction processes.

A characteristic of the construction profession is the extensive hierarchy of the typical project organisation where not only different organisational “layers” but also company borders (and affiliated individual interests) contribute to a pronounced fragmentation of the production process (Emmitt & Gorse 2003). Cooperation should take place as described in the official organisation charts, nevertheless cooperation and communication follow systems and patterns very different from the formal channels of command (Hill 1995). Organisations reflecting institutional rules generally tend to build gaps between formal structures and actual work activities (Meyer & Rowan 1977).

A classic study exposed no less than five de facto sub-organisations within individual projects (Tavistock 1966):

a) A system of operations

b) A system of resource controllers

c) A system of formal controls (directive functions)

d) A system of informal controls (adaptive functions)

e) A system of social and personal relations

Research by e.g. Hill (1995), Pietroforte (1997) and Wild (2002) found formal project information and communication to be incomplete and the informal communication paths crucial to project completion. To temporary organisations, the lack of an efficient formal communication network is highly problematic since social and interpersonal relations need to be (re-)established at every project. The combination of a newly composed temporary organisation and a large complex project is therefore
likely to hamper effective coordination and control over the production process. Under such conditions institutionalised conceptions of “the way things are done” may therefore often be advantageous (Powell 1991).

Communication is a critical factor for successful coordination within any project, yet relatively little research has been carried out with respect to the particular challenges of establishing effective communication in construction since the early work of Higgin and Jessop (1965), (e.g. Hill 1995, Pietroforte 1997, Emmitt & Gorse 2003). Information Technologies and knowledge management appear to offer considerable potential for facilitating collaboration and integration, although it is difficult to find clear evidence that either have started to reach their potential, perhaps because of the reliance on informal communication paths (Pietroforte 1997). One factor contributing to the problems of improving communication within construction projects is the relatively late application of the softer sociological sciences in construction management research (Emmitt & Gorse 2003).

Cross-functional cooperation
In construction work tasks and assignments are subject to a high degree of mutual interdependence and uncertainty (Tavistock 1966). With the increased technical complexity and extended use of subcontracting the issues of effective process management are gaining ever more importance and the ability to successfully cooperate cross-functionally is relevant as ever before. In this respect construction is challenged by its strong centuries old traditions for specialisation. The vast majority of subcontractors are specialised in one trade discipline reflecting assignments typically tendered. This specialisation and professional diversity (reflected already in the educational structures) have led to increased fragmentation and problems with communication between specialists (Emmitt 2002).

Conflicts are nourished by unpredictability and absence of interest and responsibility concerning the total project performance. Frequent disputes and every group’s struggle for own interests appear to have had had a major impact on the cultural interpretation of project interaction becoming cemented as “the others versus us”. The challenge of interdisciplinary cooperation is not limited to the work on site. In a study of the design brief process and its management implications Whelton (2004) concludes that continuous learning processes are vital for the outcome of the individual project, and draws attention to the importance of managing and facilitating the processes of purpose development among various stakeholders.

THE ISSUE OF CULTURE
Culture in general, and organisational culture in particular, is subject to much attention in management literature. This is not surprising as culture is vital for the human being’s interpretation of meaning in relation to work and social processes of all kinds. Introducing new process-orientated procedures of cooperation is much more than just a matter of revised procedures but to a great extent a question of interpretation within existing culture(s). One can, perhaps, easily imagine the difficulty of addressing these matters throughout the supply chain and project organisation when considering that Hancock (2000), when studying cultural differences between construction professionals in Denmark and the UK, found more pronounced variation between the architects, civil engineers and building surveyors as groups of professionals than what can be ascribed to nationality. Hence it may be assumed that cultural challenges of implementing lean construction, as discussed in this paper, are not an isolated Danish phenomenon.
When studying cultures in construction it is important to understand the context in which those cultures may be displayed. Two issues are central for understanding this context: the peculiarities of construction including the sector’s project organisation and the historical development of construction. The (Danish) roots of professional division in guilds, and later unions and/or other closed groups/societies, alternating temporary employment at different sites, project organisations, and the complex project organisations of extensive hierarchies have supported the development of strong subcultures. These sub-cultures appear to be bound to professions and trades rather than individual firms (Jørgensen et al 2004, Hancock 2000).

In many respects construction differs from other sectors. Of cultural differences between other industries and construction Hancock (2000) identifies the following examples as characteristic for construction: A culture of conflict, a culture of fragmentation, a culture of labour mobility, a culture of subcontracting, a culture of crisis management and a masculine culture. This indicates that the phenomena revealed by Tavistock (1966) still affect construction. In *Makers from Mars, Designers from another Planet?: Sub-Cultures in a Joined-up Industry* Powell (2001) discusses the macho role of the builder vs. softer cooperation issues, in this case represented by designers and a design culture. It is argued that disparate subcultures between construction designers and builders form a hindrance to effective cooperation throughout the supply chain. Similarly Hancock (2000) draws attention to cultural factors that must be considered to severely challenge interdisciplinary cooperation.

**Definitions: Social systems vs. culture and subcultures**

On the basis of the fragmented organisational reality, construction can be considered a social process (Hill 1995). A social system, as defined and approached by Tavistock (1966), is: “a group of people systematically sharing control of a common process”. Following this definition many different assignments, tasks and actions are dealt with in what can be seen as different and situation-related social sub-systems.

When approaching cultural phenomena it is important to define what we understand by the term ‘culture’ which is often used in various ways implying very different meaning. E.g. Kunda (1992) and Alvesson (2001) cite Geertz (1973) for defining organisational culture as: “the shared rules governing cognitive and affective aspects of membership in an organisation, and the means whereby they are expressed.”

It is important to distinguish between culture and social structures. Culture refers to kinds of common mentality of shared ideas, conceptions, meaning and symbols. Social structures refer to systems of action as deriving from social relations and interaction (Alvesson 2001, 2000). As such culture is not a tangible phenomenon to be found and deduced from individual persons. Culture only exists between persons (Alvesson 2001, 2000). Consequently culture cannot be studied in its pure form independent from the context in which it manifests itself. Studies of social systems including action, behaviour and symbolism provide a possibility to critically discuss cultural expression as manifested through mechanisms of human interaction.

Many other factors influence the norms and behaviour displayed. The kind of work, organisation, various interests and the individual member’s age, sex, education etc. are probably more important for the norms exhibited than the influence of culture (Alvesson 2001). A point emphasising that a construction project organisation in a wider sense only forms a sub-organisation within the sector, which again forms a sub-organisation within society. Organisational culture stem from many external factors of which several originate in the surrounding society at large (Hancock 2000) rather than in e.g. charismatic leadership exclusively (Alvesson 2001). Generally speaking Alvesson (2001) warns against overestimating managers’ ability to consciously shape,
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control and change culture within the companies they run. A view differing radically
from much popular management literature ascribing top managers extensive
opportunity to radically reengineer existing organisational culture (e.g. Kotter 1996).

THE CASE STUDY

In 2002 a study was undertaken of a large Danish contractor seeking to move parts of
work planning and coordination to the construction site, actively involving
subcontractors on operational levels in detailed planning and work scheduling.
Having been heavily involved in large publicly supported development programmes in
the 1990s the contractor was experienced with management innovations. Based on
those experiences the contractor developed its private lean construction concept and
gradually introduced conventional lean construction tools as The Last Planner System
(Ballard 1994) and various evaluation techniques. The contractor paid much attention
to issues of cooperation and coordination and introduced process facilitation on large
projects. Education was relatively highly prioritised. Courses in applied concepts of
quality insurance, production systems, safety issues etc. were offered all of the
contractors’ project managers, foremen, clerks and others coordinators. At the
individual projects, key personnel from subcontractors were also provided a short
course on the contractors’ production philosophy and the tools applied. Additionally
all site personnel were at minimum given a two-hour course in safety issues and
procedures at each project.
An ethnographic approach was adopted with the researcher observing and recording
the implementation of the process model. The central contracting organisation and a
large design-build project were studied in parallel during seven months. In addition to
the observations 26 interviews were undertaken covering all organisational levels.
Although the research was primarily concerned with change management, the findings
of the case study helped to highlight other issues fundamental to the successful
management of construction projects. The results of the study found that
communication between workers, especially feedback, could have been better –
highlighting the different structures within the organisation that influenced innovation
(see e.g. Bang et al, 2001).

Process facilitation

The new production concept was based on substituting the traditional transformation-
orientated construction approach with a flow-orientated understanding (Koskela
2000). Realising that a change towards better cooperation was needed on construction
sites if efficiency was to be improved, the new process-orientated procedures were
based on traditional contracts but with cooperation supported through process
facilitation. This was the task of a so-called ‘process facilitator’ employed by the main
contractor to support planning, coordination and cooperation on site. By promoting
the importance of the new production concept and successful facilitation high-ranking
managers of the main contractor put much effort into providing the process facilitator
positions with high status and legitimacy. Matters of project finances etc. were kept
strictly apart from the facilitator’s area of responsibility. Recognising that cooperation
often suffers problems deriving from conflicts between parties involved, all such
responsibilities were assigned the project manager. The underlying idea was to enable
the facilitator to concentrate on work processes, and not have issues of basic
coordination and cooperation taken hostage in other conflicts or disputes with the
facilitator personally involved. Thus, in part, the process facilitator and the project
manager took on the ‘good cop, bad cop’ roles of project management.
Construction is a male dominated business (e.g. Hancock 2000, Clarke et al 2004). However many women entered jobs as process facilitators. At many instances members of the main contractor’s organisation stated that women are the best process facilitators because women’s human skills are superior to men’s. The point of view was often heard that all process facilitators ought to be women “because women can handle difficult social processes where men fail”. However, no deeper analytical arguments were brought up for support of the assumption that women by nature are the best process facilitators. Rather it must be assumed that this belief reflects; a) recognition of the conflict-ridden masculine culture embedded in current practices, and b) traditional perceptions within the business (resulting directly from and preserved by ‘group-thinking’) and as such taken for granted. According to Alvesson (2001) most jobs are ‘sex-typed’ (gender-typed). Jobs are perceived as either masculine or feminine and subject to common interpretation about whether naturally practiced by men or women. Much indicates that the process facilitator role got sex-typed as female. An issue discussed later in this paper. When interviewed, the female process facilitators expressed the view that efforts to provide the facilitator role high status had not been successful. However, several found that the development was positive and noticed that some men were showing interest in working in this position. The study highlighted a large number of culturally originated difficulties of implementing the new approach to cooperation. Concerning the issues of process-orientation specifically, it was found that process facilitation was far from being utilised as intended. Construction cooperation is notoriously conflict-ridden and formal procedures are often ignored (e.g. Tavistock 1966). The studied project was no exception to this. However observations supported conclusions of previous research by Tavistock (1966) who found that people cheated in carrying out formal roles, thus enabling informal collaboration. In other words; cooperation was currently taking place in informal social systems where culturally institutionalised norms were setting the scene for interaction.

Despite general consensus that the process facilitator did a good job and was talented for stimulating cooperation, project participants showed reluctance to share information and plan ahead. In spite of good will and common interests in improved coordination, participants constantly slipped back into old roles when settled in a meeting situation. There were indications that construction meeting situations in general are subject to ritualism and culturally interpreted as a scene for settling blame for current situation, not for looking ahead. It was obvious that participants on all levels had difficulties finding their feet concerning how to relate to the role and function of the process facilitator.

For the adoption of new process-orientated procedures it is crucial how these are culturally interpreted in the systems of social relations. Integrating the process facilitator role in the current situation thus requires that this role is somehow tangible in the informal systems of social relations. With no formal power and control of individual tasks a process facilitator is bound to obtain influence only from the individual participants’ belief in his/her “personal qualities” enabling him/her to have a say among other participants and thus contribute to “action”. Roles and professions characterised by action, firmness and insensitiveness – characteristic for roles traditionally found on construction sites – are typically seen as masculine (Alvesson 2001). In the masculine culture (Hancock 2000) it seems highly questionable whether heavy female sex-/(gender)typing of the facilitator role supports the process facilitator’s integration in a male dominated project organisation.
Cultural interpretation – constructing sense
Despite construction’s vulnerability to uncertainty, builders expressed a common belief that success or failure depended on key-persons, more than on how work is done and by which means. References to “personal qualities” somewhere in the supply chain usually formed the starting point for analysis and explanation - even to technical problems occurring from combinations of causes connected to different areas of responsibility. This indicates deep-rooted “group thinking” as described by Alvesson (2001). The metaphor of “the culture as blinkers” may illustrate the cultural manifestation displayed through the emphasising of personal qualities. Also the metaphor of “the culture as a frozen image of the world” may help understanding the importance ascribed this issue (e.g. Alvesson 2001).

Power (and the manifestation of it) also appeared to form an artefact of great symbolic importance. Projects are fraught with conflicts and disputes (Tavistock 1966, Hancock 2000). Each project forms a frame for perpetual negotiation about getting preconditions for own responsibilities assigned priority and resources when re-planning is needed. Power is perceived as vital for successful performance in these situations. In fragmented project organisations formal power (as according to hierarchal position) does not necessarily provide direct authority over sub-contractors and their employees who are responsible only for tasks as contractually specified. Rather authority is ascribed to he/she capable of making work progress. Thus authority is strongly influenced by the situation in which it is applied. Therefore social relations set a scene for internal positioning in a system of asymmetric division of power and influence widely determined by control of financial means. Power relations are very influential concerning the development of organisational culture (Alvesson 2001). Therefore structural aspects affecting issues of power cannot be approached independently from their cultural implications. This difficulty by introducing process facilitation is illustrated in the following example from an educational seminar where participants recurrently expressed uncertainty about how to relate to the process facilitator role: “If the process facilitator isn’t responsible for contractual matters and can’t sign financially, how can we then trust him/her?” The metaphor of “culture as a regulator of profit/proceeds” (Alvesson 2001) may help provide an understanding of why a fragmented and temporary system of divergent interests and bargaining positions usually do not break down in practice. Even in conflicts with much to win and little to lose participants usually behave within certain norms experienced as natural, universal and everlasting.

A change in culture
The main contractor’s management was conscious about wanting a change in culture regarding how the phenomenon construction was perceived by those involved. Similarly it wanted to change the norms of cooperation from a mistrustful conflict intensive behaviour towards a cooperation attitude, enabling the project organisation to spend resources solving problems rather than disputing them. The managers responsible declared that they wanted to change the current macho norms and implement soft values in the organisational culture. The management was in other words seeking to practice so-called “culture engineering”. An ambition implying considerable challenge in a business where project organisations are temporary and fragmented in terms of different firms and professions constituting them. Kunda (1992) delivers an illustrative example of the difficulties of successful culture engineering exercises, questioning whether managers will be able to see through the results when attempting to make constructive use of identity building mechanisms. It is too early to conclude on final results and long-term effects of the culture building
efforts of the case studied, but worth mentioning that when the observation period ended there were indications that it had become a widespread impression within the contractor’s organisation, as well as within the Danish construction sector in general, that the demand for enhanced process awareness would be something more than just “this year’s buzzword”.

CONCLUSIONS FROM THE STUDY

The difficulties of implementing the new planning and cooperation concept indicate a need for more comprehensive research investigating more thoroughly the existing construction paradigm in terms of process understanding and participants’ identities in relation to (current roles) and functions. Organisations innovating in important structural ways bear considerable cost in legitimacy when deviating from prescriptions of institutional myths (Meyer & Rowan 1977) and failure to effectively address these issues may imply considerable risk of the organisation impeding the implementation of new process-orientated procedures.

De-fragmenting the construction process must be an issue throughout the supply chain. The case study behind this paper mostly dealt with issues on various contractor levels but it was clear that there were many obstacles to cooperation on site derived from aspects that could have been avoided, or more efficiently dealt with, had design and construction phases been better integrated in terms of designing and planning the construction process. The issue of how best to address the interconnected tasks of design management, site management and process facilitation needs further attention.

If assuming that subcultures are bound to trades and professions rather than individual organisations – more research is needed to explore whether an “isolated” process of paradigm shift can be carried through in individual companies exclusively, or if the construction sector at large will need to be addressed for promoting the process-orientated understanding of construction as approached by lean construction and similar process-orientated concepts or initiatives (as e.g. experiments on organisational values in management of partnering projects (Bonke et al. 2004)).

When considering the vast professional fragmentation of construction, socio-technical methods may prove too shallow for providing the depth necessary for research to provide a sufficient cultural understanding of the object studied.

Before concluding on the course for approaching any radical change to organisational working methods in construction, it may be necessary to investigate the contextual social and cultural implications of process-orientated construction cooperation through anthropological research methods.

A CALL FOR FURTHER RESEARCH

Conclusions of this paper are based on empirical material recorded from a Danish project. On this background it is not appropriate to draw universal conclusions on cultural issues of process-orientated implementation. When studying cultural differences between construction professionals in Denmark and the UK, Hancock (2000) found more pronounced variation between the architects, civil engineers and building surveyors as groups of professionals than what comes to nationality. It may, therefore, be assumed that the cultural challenges of implementing process-orientated cooperation and facilitation as discussed in this paper cannot merely be ascribed as an isolated Danish phenomenon. More research into different implementation programs throughout the world will be necessary in order to identify cultural impediments of applying a process approach and how such sociological matters can be addressed.
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