

CONSTRUCTION PROJECTS AS ORGANIZATION DEVELOPMENT

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The conventional wisdom about the role of clients and the re-engineering of construction projects around client satisfaction that has emerged from the Latham and Egan Reports is challenged. It is argued that the present conventional wisdom is misleading as it assumes a stable alignment of goals among the project stakeholders from the inception of projects. Hence 'solutions to the problems of construction' become focussed on technical rationality and methods. By focussing on the set of organizations involved in construction, it is shown that all the parties necessarily change as a result of the project; their interactions generate a dynamic evolution of project goals and methods. Projects are shown to produce under-boundedness in client organizations which, if not managed, can induce an environment of failure in the project. These organizational changes and developments occur regardless of the initial intentions of the parties and are shown to be comparable to Organizational Development. It is concluded that project management requires skills in facilitating organizational development.

Keywords: boundedness, change, client, organizational development, uncertainty.

INTRODUCTION

This paper develops our larger project to 're-search' construction to improve operational efficiency and its participants' quality of life. We are critical of what we call here 'conventional wisdom'. We perceive this as part of the problematic nature of the industry. This conventional wisdom is a particular perspective on construction and its operations. This model identifies a list of problems each of which has a cause and a party to blame. Solutions then involve the removal of the cause and the re-structuring of the blamed party. The recycling of these 'problems' through each report on Construction from Simon (1945) to Egan (1998) and the poor performance of proposed solutions is greeted from this conventional wisdom as being an example of construction's inability to change and part of its failure. Although different solutions are suggested in these reports, they all come from the same conventional wisdom and this never seems to be challenged.

Other commentators such as Groàk (1994) have different models of construction and we suggest that these can be a source of more effective improvements. This different model involves an understanding of wider interactions placing the particular in the general rather than the general in the particular. In this the conventionally identified problems are seen as characteristics of construction tasks and the structures and processes that have developed to undertake them. The conventional wisdom also reflects the power of certain stakeholders not just for action but to set the meaning and interpretation of events particularly of what is a problem and who is responsible. This power system establishes criteria for improvement, determining the selection and

implementation of solutions and hence who benefits and who suffers. This implies that hidden within any solution is a resistance to its implementation that may make it ineffective. The current concern with client satisfaction is appropriate. However the conventional wisdom is simplistic in viewing problems and faults in the process. The re-engineering of the process that is suggested will not deliver the expected results because the wider interactions and stakeholder perspectives are under-accounted.

A concern of this paper is the change induced by projects in both the building itself and the client organization. The objective of the paper is to compare construction projects to Organization Development (OD). A justification for this is that construction and OD involve organizations in a change process and in responses to uncertainties. Since the nature of uncertainties has been explored in OD, we argue that this is an appropriate comparison as it offers learning for construction. Our methodology has been to review and develop a small body of literature around this theme. In this we are model building. This is justified because the article aims to open a debate about where both management attention in construction and the research agenda related to management should be focussed: on the organizational matrix (Emery and Trist 1965) from which projects emerge.

We base our critique of conventional wisdom on considering construction events as situations (Schön 1983). In this we use Higgins and Jessop (1966) and Cherns and Bryant (1984) to demonstrate the divergent nature of clients. Groàk (1994) has also made explicit that the apparent coherence of construction organizations and clients, implicit in the conventional model of the construction process, is not viable. As Groàk (1994) states the project develops an existence/meaning independent of the organizations involved. We use the ideas of over- and under-boundedness (Alderfer 1979 and Brown 1980) to describe these phenomena. The roots of these ideas in OD are summarized to show organization consulting as a key activity in response to the uncertainty in construction and in client organizations. We conclude that the skills of OD and organization consulting are necessary for construction management to manage the relationships with and within the client.

PROJECTS AS SITUATIONS

Previously (Boyd and Wild 1993) we have argued that an appropriate approach to the education of construction project managers would be to regard construction projects as 'Situations' characterized by complexity, instability, uncertainty, uniqueness and value conflict and to focus on the development of managers as 'Reflective Practitioners'

(Schön 1983 and 1987) capable of handling Situations more effectively. We find that we need to revisit and further clarify our appreciation of uncertainty in the face of the diversity of views (Boyd and Wild 1996) which characterizes construction projects. This article evolves our appreciation of the uncertainties and its links to instability and value conflict which abound within and around the construction process.

Schön's concepts emerge from a discussion of Technical Rationality. He defines this "... intelligent practice as an application of knowledge to instrumental decisions..." with a requirement for problem solving in contrast to Situations in which the inter-penetration of the different elements creates a requirement for problem setting: "... in real-world practice, problems do not present themselves to the practitioner as givens. They must be constructed from the material of problematic situations...". Problem setting is not itself technical although it is a necessary condition for problem solving.

Schön (1983) comments: “If the model of Technical Rationality is incomplete, in that it fails to account for practical competence in divergent situations, so much the worse for the model.” This failure is due to the inadequacy of established knowledge and theory in dealing with the complexity of large scale systems. These systems have shifting ground at both ends of the gap that professionals have to bridge and this is made worse by the expectations of society. Overall the 19th century division of both labour and knowledge cannot cope as “... the effective use of specialized knowledge depends on a prior restructuring of situations...” (Schön 1983). Technical Rationality responds to Situations through: selective inattention, simplification for situational control and categorization into residual categories, whereas the Reflective Practitioner proceeds through: Appreciative Systems; Over-arching Theories; Role Frames and Media, Languages and Repertoires.

The inter-penetration of the different elements in Situations creates a fundamental requirement for problem setting. Hence we need to look beyond the technical aspects of projects into the organization and organization change aspects as well. We believe that the ‘conventional wisdom’ and standard models of construction processes are based on technical rationality and that this limits our ability to understand project operations and to improve them. In our view this inadequacy of established theory and its supporting body of knowledge will not allow construction to meet the expectations of clients or society.

THE CLIENT SITUATION

Most construction research has considered only the project. The importance of the client was recognized by Higgin and Jessop (1965) and Crichton (1966). They argued that interdependence and uncertainty were critical characteristics of the construction process and interpreted them in terms of “communications and information flow”. Interdependence of decisions generates uncertainties within the building process and the interaction of the members of the building team. These include the uncertainty of the client about the design team and between the client, design team and construction team. This work on clients was taken up by Bryant, Mackenzie and Amos (1969) who identified five aspects of client situations: the structure of the client organization into individual functions; the inter-relationship between the functional sub-organizations; the degree of allegiance of each function to a common authority; the nature of the primary tasks of each function; the extent to which there is congruence or competition between functions. When the client decides to build, the scope of the building requirement, and the ability of the construction team to meet the building requirements, both add to the complexity of the situation.

Cherns and Bryant (1984) explored the competition for scarce investment resources between different interests within the client organization and how this generates value conflicts involving power, and manipulation of declared risks and costs. Power accrues to the ‘winners’ who become hostages to fortune in relation to the success of their project. The hostages include personal reputations, professional and functional interests which focus differentially on the limits of time, cost, quality etc. The client is not unitary and prior events within the client system affect the current conduct. The client’s early decisions have the most significant effect on the formation of the Project Team and its subsequent performance. People lack clarity as to their agreements and/or their criteria of judgement which are, in any case, unstable.

Organizational Boundedness

The notion of organizational structure becomes critical for definition of improvement, and this is treated simply within the conventional wisdom but it is in fact problematic. Cherns and Bryant (1984) demonstrate that it is inappropriate to consider clients as unitary as there are interactions and internal boundaries within the client system.

Similarly, boundaries are not clear within construction project organizations.

Construction projects can be viewed as involving a Temporary Multi-Organization (TMO) (Stringer 1967). Groàk (1994) considered the project TMO as significant and argued that it has a clear identity and existence. Hence construction has no identity as an industry; rather it is a population of projects for “Technology Fusion”. This creates a “Demand Chain” spanning the boundaries of industries. Emphasizing ‘the project’ shifts the construal of good practice; the origins of productivity improvements; research and development and management within the construction process. It is from this notion of the strongly defined project set within a weakly organized environment that he argues that the so-called problems of construction are its special characteristics. ‘The project’ is a technological paradigm, which can respond to uncertainty and turbulence by evolving into “unpredictable (but inevitable) configurations of supply industries and technical skills”. Such a concept is difficult to understand without paying attention to the organizational matrix (Emery and Trist 1965) that is the set of interacting organizations from which projects emerge, and the evolution of relationships within both this set of organizations and within the project.

A more robust concept that will allow us to look at the complexity and dynamics of organizations, particularly at their boundaries, is required. The permeability of organizational boundaries has been a concern of system models of construction (Walker 1996). The ideas of open system theory suggests that there is a significant interaction between an organization and its environment across its boundary. This is necessary for the survival and growth of the organization (Alderfer 1979). In fact the definition of system boundary becomes unclear as in the above examples of clients and project TMOs. The degree to which an organization is influenced by its environment is a measure of its ‘boundedness’ (Alderfer 1979) and this we believe allows us to analyse client situations better.

Alderfer (1979) considers two conditions of organizations: under and over boundedness. Over-bounded organizations do not respond to changes in their environment. They do not develop to address external changes and are unaware of external needs. Under-bounded organizations respond to changes in their environment in such a way that they lose purpose and any effectiveness of action. A similar concept is Brown’s (1980) idea of under and over organization where the internal structures and processes of an organization respectively lack coherence or lack responsiveness.

Alderfer(1979) argues that boundary conditions are critical influences on other aspects of organizations: “the primary threat to under-bounded systems is that they will become...caught up in their environmental turbulence”. However boundaries are difficult to identify. The conditions at the boundary must be inferred from the internal state of the organization. Under-boundedness causes: meaninglessness and value conflict over objectives; wasteful utilization of resources; fragmented authority relationships; diversity of expectations over roles; problematic communications due to withdrawal from relationships and a propensity to anger and conflict. Because of this, inter-group dynamics become concerned with identities and there is withdrawal into role in the face of conflict reflecting fight/flight behaviour.

CONSTRUCTION PROJECTS AND CLIENT BOUNDEDNESS

Using these concepts, we analyse the effects of building on clients extending the analyses of Cherns and Bryant (1984). We contend that building induces under-boundedness in both the client and in the project TMO which construction project managers have to handle.

For the client organization, construction creates under-boundedness in the section of the organization promoting the building and later in the rest of the organization. Uncertainties in the client arise from outside the building process: from interest rates, the market, competitors, and from public image. This induces financial and resources conflicts that aggravate the dissatisfaction of those disaffected by the building (Cherns and Bryant 1984). Those disaffected tend to amplify external influences onto the client project group. Thus, this project sponsor group feels threatened both directly and indirectly by external influences i.e. it is under-bounded. Organizations can also be internally under-bounded in the sense that they can generate their own influences for example through political or social activity. The reactions to under-boundedness ricochet around the organization causing impacting of information (Winch 1989) and hardening of positions i.e. people start working on expectations and perceptions rather than on real information.

It is almost by definition that the project TMO is responsive to the client i.e. it is under-bounded to client concerns. Indeed the 'conventional wisdom' is to make project teams more responsive and so under-bounded to client concerns. Unresolved conflicts in the client account for: design changes followed by delays and difficulties during construction causing the scope of projects to creep, adding to costs and generating claims. These difficulties have an idiosyncratic character created by the structure, politics, culture and processes exacerbated by the client's own search for certainty (Boyd and Wild 1993). For the client a construction project is "a large-scale innovative decision with consequences for existing patterns of resource sharing and risk-taking in terms of power conflicts and political behaviour within the client organization" (Cherns and Bryant 1984). These intrude forcibly into the project. Especially important is the remitting of the project to lower levels of authority after it is initiated. This delegation dilutes the power of the client system that becomes reactive and further under-bounded as a consequence. This reflects Evans (1994) argument that in a situation of project failure the client's top management must be persuaded to accede to the costs of recovery. Problems in the project are amplified and modified in the wider organization and eventually return to disturb the project. They induce misinformation about the project - being economical with the truth - in order to protect the project.

Client organizations may or may not be used to such under-bounded disturbances. Many organizations seek a state of stability by over-bounding themselves to external and internal disturbances. This reliance on stability makes the organization vulnerable to building projects. We contend that over-bounded organizations find building difficult as it induces under-boundedness in them that they are unable to handle. They try to handle it formally and this is an inadequate approach to making decisions within the temporal and relationship confines of a project. Under-boundedness proliferates; objectives are reformed and blame and inaction ripple through the organization impinging on the project and being thrown back like in a pin ball game. These dynamics are more excitable as no one is managing them; the mistaken belief is that

the organization is stable, whereas it is developing. This mistakenly provokes simple explanations of cause and effect and the allocation of blame.

ORGANIZATION DEVELOPMENT

These interactions between clients and building projects present a more complex model of project processes than the ‘conventional wisdom’. These dynamics evolve from project inception to completion and are the most difficult task of management. It is our belief that this can be viewed as Organization Development as it concerns the capacity to cope with change in organizations due to internal and environmental uncertainty.

Organization Development (OD) involves “a consideration of how work is done, what the people who carry out the work believe and feel about their efficiency and effectiveness...” rather than “...a linear recipe or algorithm” (Warner Burke 1987). OD originated in systems thinking and group dynamics (French and Bell 1990). A key concept is the Organizational Iceberg. This relates the formal and informal aspects of organizations in such a way that the informal is considered a hidden domain. Formal (overt) aspects include: goals, technology, structure, policies, products, procedures and financial resources. Informal (covert) aspects include: beliefs, assumptions, perceptions, attitudes and feelings about the formal system; values, informal interactions, group and other norms and constitute the majority of the organization. OD involves a concern with the viability of organizations and their cultures as ‘theories-in-use’ underpinning actions rather than with official ‘espoused theories’ (Argyris and Schön 1978). OD focuses on the interaction of the formal and informal systems.

The equivalence of OD to Situations and construction is asserted. The uncertainties of the client, the dynamics of multi-organizational relationships and their evolution between and within the parties make this so. The presence of a great number of organizational interests creates a pull towards under-boundedness within construction projects whose teams rarely attain stability and this must be recognized as their normal condition. The five aspects of Situations oscillate between the latent and the manifest within the project generating conditions of under-organization and under-boundedness in both the project and the constituent organizations of the matrix.

NEW MODEL OF CONSTRUCTION

These analyses imply the intrinsic instability and complexity of both the organizational matrix and the project. The participating organizations are pulled in at least two directions and expectations around roles in construction become characterized by shifting value conflicts. This bias of construction projects towards becoming ‘Situations’ implies that the management of construction may be partly defined as coping with multi-organizational dynamics.

Stringer(1967) characterizes the inter-organizational field created by the appointment of consultants, contractors etc. to the project as a Temporary Multi-Organization (TMO) with multi-organizational dynamics. TMO are an organizational form that has the potential for handling uncertainty, minimizing risk and allocating it equitably, and enabling learning to take place amongst its component organizations. However, this depends on the managerial capabilities of the component organizations and their co-ordination skills that are critical to the performance of the project. Advisers usually underestimate the complexity of the client, searching for a certainty which is not

available or seeking to contain this uncertainty in a single point of contact - the project manager or the managing director.

Uncertainty arises both intensively from inside the project and extensively from beyond the project boundaries, including inside the client system and the various construction organizations. Friend (1994) has attempted to classify the content of uncertainty using high level of abstraction and recurrent frameworks for mapping the uncertainties of an inter-organizational world. Uncertainty is plural, being both latent and manifest, evolving and cumulative, and varies with the size of the project. These uncertainties are organizational and socio-technical so we argue that effective construction project management must involve handling the organizational changes and development that emerge within the project life cycle.

NEW SKILLS OF CONSTRUCTION PROJECT MANAGEMENT

This argument implies that particularly the OD skills of "...eliciting organizing behaviour..." (Brown 1980) and the skills of attaining collaboration (Gray 1989) are key aspects of the capacity of construction. i.e. OD processes involve consultants in: collaborative diagnosis and management of the culture; attention to the implications of perceptions and actions for the wider organizational system; and the use of methodologies such as Action Research. Attention to the power system and power skills are important in OD consulting. This has implications for the role of the project manager, together with the expectations which surround that role and their evolution over the project life-cycle especially in view of the Network Centrality (Lord *et al.* 1990) of the role. However entry and contracting to undertake OD are problematic (Neumann 1995). This includes re-negotiating roles and expectations about roles and performance as the client-consultant relationship evolves. Clients have a wide range of expectations about the role of consultants. More confident clients entertain those of engagement, collaboration and neutrality (Neumann 1995). Less confident ones demand the roles of a pair of hands or experts which hold out the possibility of blame and/or conflict if outcomes are not as expected (Neumann 1995).

Organization Development resembles construction in the uncertainties regarding contracting and the evolution of relationships and agendas. Consulting to under-bounded systems requires attention to both internal and external dynamics and is more demanding for consultants than conventional OD. Such consulting requires avoidance of becoming enmeshed in the resulting dynamics (Alderfer 1979). OD consulting processes need to be appropriate to the degree of organization existing internally within client organizations. Under-organized clients require authoritative and directive consulting to create normative constraints, clarify roles and procedures, and elicit "...organizing behaviour...". However, attaining a higher degree of organization affects the existing power system and consultants can experience problems with emotionally driven power struggles, rapid polarization around conflicts and pressure to take sides. Thus, political competencies are critical to successful consulting involving an ability to help the client structure their objectives in the light of external influences whilst also increasing the self regulatory capacity of the client (Brown 1980).

As far as project management is concerned, Harrison (1995) defines this in terms of coping with the experience of discontinuity in a world of start-up and task uncertainty requiring special skills in "...the care and feeding of infant systems...". Trist (1976) suggests people need the following skills as adaptive planners: the ability to steer

through complexity; to work simultaneously in left and right brain modes; to span boundaries and to act upon insight. Lovell (1993) suggests the willingness to confront questions of power; the ability to hold and share power as a resource and to work effectively with lateral and upward influence. To these we add working with procedures as diagnostic devices and recognizing the distinction between managing the uncertainty in the project and consulting to the uncertainty in the client. Project Management as OD involves consulting to the uncertainty in the client by raising questions about the client's evolving uncertainties and contracting psychologically to establish trust and resolve such problems (Neumann 1995).

Consulting to the uncertainty in the client implies acknowledging some responsibility of construction as a service process beyond the immediate interest in profit from a particular contract by the manager's organization. Profitability is grounded in values. This is implicit in Latham (1994) as a wider view of construction although it is poorly expressed in Latham's view of the client that is based on conventional wisdom.

CONCLUSION

The paper has challenged the conventional wisdom about the role of clients in construction projects. Using Schön's (1983) ideas of 'Situations', we showed that technical rationality is not a viable model for construction. From this, it argued that clients are not only not homogeneous but also in organizational flux. This client dynamic was explained through the ideas of under-boundedness which makes them too responsive to external influences. Building projects induce a state of under-boundedness in client organizations which cause the organization to develop. It was argued that the reciprocal development of the project and the client organization must be understood before some projects can be successfully managed. The project is but one influence on the client; over the life of a project the externally and internally derived uncertainties cause changes in goals and changes in the organization. Failures in projects can be related directly to uncertainties in the client organization as the project and client organization have developed reciprocally. In this situation, the role of construction project management can be compared to organization development consulting. Thus, it is argued that success in project management requires skills in facilitating organizational development.

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