

Information Spheres: Collaborative information behavior within project teams

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ABSTRACT

This paper explores the information practices of public sector project teams. Drawing upon a qualitative case study, we discuss the political nature of collaborative information behavior. We noted the creation of safe spaces for the development and exchange of information. We conceptualize these as information spheres formed to bypass power induced information behavior that excludes expert power, such as information avoidance. This approach contrasts with the expected project management and information norms, rules and behavior.

KEYWORDS

Activity Theory, Information Spheres, Project Management, Collaborative Information Behavior, Strategic Information Behavior

ASIS&T THESAURUS

Qualitative analysis, Information sharing, Information behavior

INTRODUCTION

This paper contributes to scholarship into the seeking, sharing and use of information by providing a fine grained exploration of the practice (Lloyd and Olsson 2019) of local government teams developing managing complex projects. These teams work in complex and uncertain political environments, a condition exacerbated by the need to seek public policy goals which are inherently resistant to definition (Boyne 2002, Crawford and Helm 2009, Head and Alford 2015). This provides a research environment in which the social, affective and contextual issues that shape information use (Burnett 2015) are illuminated and allows a contribution to the developing literature on collaborative information behavior (c.f., Pilerot and Limberg 2011).

The genesis of this paper lies in the fact that much of the foundational work into project management has assumed that all projects are fundamentally analogous highlighting a standard set of activities such as planning, design, monitoring and risk management (Winter, Smith et al. 2006). Similarly, most models of information behavior emphasize analytical models of decision making based on a rational process of information seeking and use (Allen 2011). Formal project management methodologies are based on the classical hegemony and embedded within rational theories of power providing a universal and deterministic model which emphasizes planning and control uncertainty (Svejvig and Andersen 2015). These project norms have been inscribed

into management information systems their standards and practices which are in turn legitimized and maintained through training, certification processes and accepted practice (Hodgson and Cicmil 2007). As such normative project management places a particular emphasis on information as a neutral object and is predicated on concepts of making the ‘right decisions at the right time’ and that ‘accurate and timely information’ is an essential determinant of ‘success or failure’ (Cleland and Ireland 2002). Information systems have been created to make this relationship more efficient and networked. This suggests that practice of project management and concomitant information behavior should be aligned in a transparent, apolitical and formalized process.

This consensus, however, contrasted deeply with the practice of Riley who, as a practicing project manager in local government, had observed very different practices. The research project was, therefore, initiated to explore the practice of local government teams developing large infrastructure projects.

LITERATURE REVIEW

Much work in organizations is not undertaken in isolation, but, within the organizational structure of teams. Central to the activity of a project team is collaborative working. Yet, until recently, the literature has not generally focused on the information behavior of teams, groups and collaborative settings (Sonnenwald and Pierce 2000). Specifically, there are no models adapted to construction teams and research on collaborative information behavior generally is very limited (Reddy and Jansen 2008). As such collaborative information behavior remains under-researched (Foster 2006, Saleh and Large 2011).

Many, if not most, information behavior models seek general applicability (Niedźwiedzka 2003, Wilson 2007, Ford 2015) and focus on the activities of an individual engaging in information transaction (Kuhlthau 1991, Byström and Järvelin 1995, Wilson 1999). Where models involve some form of collaboration, it is assumed that the motive to engage fully with the respondent is without political behavior (Reddy and Jansen 2008). Collaboration also assumes that information and the practices of sharing and exchanging it are overt, as well as aligned behind a singular objective (González-Ibáñez, Haseki et al. 2012).

Most definitions of collaborative information behavior assume that those in collaboration have common goals.

However, even within a single organization with well-defined codified frameworks tension existing within and between services mean that attaining a common goal is an elusive if not an impossible aspiration. Added to that within project team's information may be centered on achieving strategic and tactical goals that may or may not accord with, and therefore be differentially affected by, the cognitive framework of those supposedly in collaboration and the information systems designed to support them.

METHODOLOGY

Given the disparity between see as a state and complexity of praxis outlined in the literature review, it is important that the issues that might interrupt planning and activity are well understood. Cultural historical activity theory (CHAT) provides a framework for analysing professional work practices (Julkunen 2011) and is the principal methodological approach used in this research given that it is contextually focussed and designed to understand historically specific activities that mediate tools and social organisations (Vartiainen, Aramo-Immonen et al. 2011).

Context is often treated as a symbolic and an abstract concept, independent of any deep-seated managerial practices and socio-political structures that are habitually taken for granted. Within project management organisational networks are recognised and reflected within concepts such as stakeholder management. Despite this, situational actions are seen as discrete and independent of the macro-materiality that shapes motive, conflict and congruence. As Engels put it,

"The ends of the actions are intended, but the results which actually follow from these actions are not intended; or when they do seem to correspond to the end intended, they ultimately have consequences quite other than those intended... But where on the surface accident holds sway, there actually it is always governed by inner, hidden laws and it is only a matter of discovering these laws" (Engels 1976, p. 366).

CHAT recognises that social interaction is not homogeneous. In practice it is composed of disparate elements, whose multiplicity can only be understood in terms of the historical layers of activity which sediment base, the historical meaningful distinctions of our contextuality (Engestrom 1993).

CHAT was originally developed in the 1930's by Russian psychologist Vygotsky (1978) and later by his student Leont'ev (1978) to address the fundamental question of what is the relationship between humans and their environment. In doing so Vygotsky's assertion that our interactions with the world are mediated he broke the accepted direct link between stimulus and response, actor and object, and added an intermediate link often referred to as tools, instruments or artefacts (Marken 2006). Thus CHAT is inherently a dynamic structure, with its components subject to constant change motivated by tensions and contradictions within the

activity system which also serve as a means through which new knowledge about the activity system can emerge (Engestrom 1987).

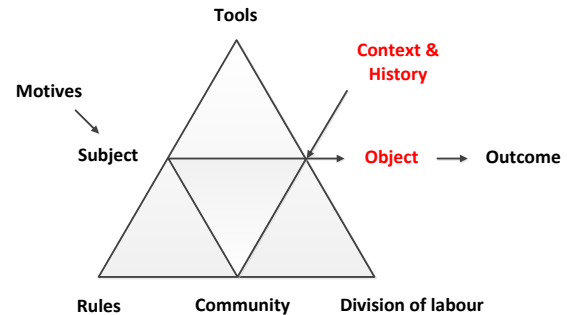


Figure 1 - Activity Theory Model (adapted from Engeström 1987)

Engeström (1999) supplemented Vygotsky and Leont'ev developments to create a third generation Activity Theory model (see Fig. 1) including a specific focus on rules, community and hierarchies (division of labor). Triggering actions; such as the perceived failure of the project manager or a major regulatory change affecting the stability of the project epitomizes the contradiction inside the activity stream or between parallel activity systems (Engestrom 1999). Whilst focused primarily on human activity the ability to inculcate artefacts and tools as mediating devices within the activity relations enables the focus of the project / knowledge management debate to shift from computer systems, widely adopted within construction project management, as the focus of interest towards an understanding of technology (and techniques) as part of a wider scope of human activity (Kaptelinin and Nardi 2009). In essence to grasp what is meant by CHAT the reader needs to understand how artefacts constituted through cultural and historical processes both mediate activity whilst achieving their functionality through it (Suchman 2000). In terms of its relevance to this research and its context CHAT has several benefits as it is:

- Highly contextual and gives due regard for historically specific practices
- Avoids a standard linear theory of development and the assumption that there is a singularly correct sequence leading to a course of action
- Focuses on collective work as the principal unit of inquiry and analysis
- Examines internal and external contradictions and tensions by way of understanding motive and change, it avoids taking unity of purpose for granted even within the same organizational unit

The project team studied was responsible for managing complex public projects funded primarily by local government in the pursuit of its public policy agenda. The project team was the focus of the day to day activities of the project, whilst the project board provided managerial

oversight. Data gathered included interviews, document analysis and by bi-polar surveys. Access to the team was particularly difficult as the project was seen as politically sensitive. Indeed, this particular work context is difficult to penetrate and under-researched as a result. Access was only possible because the first author was and is a project manager working within this context (although in a different organization). He was, therefore, seen as a quasi-insider and garnered more trust than a researcher without this background. We posit that in this case the researcher was able to access deeper structures and processes that would have otherwise remained opaque.

Teams are not a unitary concept and actors are continually constructing their collaboration (Schmidt and Bannon 1992, Hertzum 2008). Therefore, a focus on group activity by the researchers helped to avoid individual reductionism (to the detriment of collaboration) and group reductionism where the group is seen as unity, suggesting a lack of conflict. The research seeks to address this challenge informed by the rich data provided by the interviews, document analysis and critically by bi-polar surveys based on Kelly's (1991) personal construct theory. The bi-polar surveys of the interview respondents offered a method of identifying the motives of the project actors by contrasting the situational and the personal, namely norms and values, across 14 constructs thus providing corroboration for hidden motive (see Table 1).

Position vs Experience	Short term vs Long term
Autonomy vs Control	Experience vs Systems
Individual vs Collective	Implicit vs. Explicit
Diversity vs Uniformity	Iron Triangle vs Stakeholder
Milestones vs Relationships	Trust vs Ease of access
Self-selecting vs. Imposed	Close vs Distant
Uncertainty vs Certainty	Shared vs Divergent Values

Table 1: Bi-polar constructs

FINDINGS AND DISCUSSION

The aim of the project was to re-purpose a large historic building of significant public interest in itself and which contained a branch of library service reified by the local community. The project had a long history of starts and failures, highlighting the disjunction between a rational desire to improve the service operating from the civic building involved, and the politics of enacting those wishes within the context of competing issues and resources (Flyvbjerg 2006).

Much of the project history supported Dvir's (2005) contention public projects are not stopped, because of the competing interests of the various parties and the politicization of contentious projects. There was an explicit political steer that the library service should remain within the building, but this contrasted with a competing implicit proposition that something more transformational and ambitious should be sought even if that meant controversially replacing the library with a new, more sustainable, commercial use in the building. Most officers, particularly those with a project background favored the transformational approach or at least the opportunity to explore it, in opposition to the official political viewpoint.

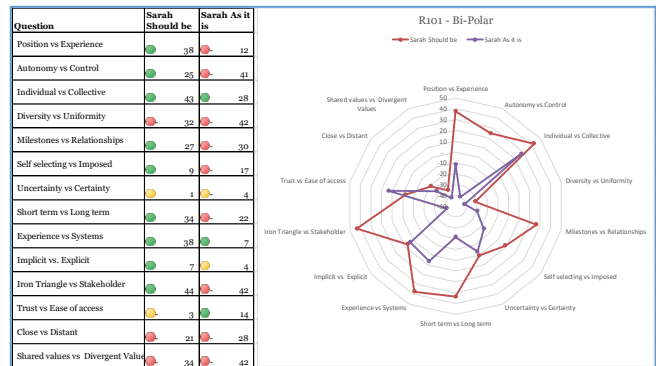


Figure 2: Bi-polar contrasting the organizational norms (as is) with the personal values of the project manager (as it should be)

The diagram in Figure 2 shows the areas of tension and congruence between organizational norms (as it is) and the values (as it should be) of the project manager. Within the project team and project board, as a whole, the bi-polar survey showed that there was little discernible consensus, between the organization's norms and the personal values of the respondents. Of the 14 constructs measured (see Table 1) the only congruence between the organizational norms (as it is) and personal values (as it should be) was that the achievement of project objectives depended mainly on the actions of individuals. Whilst this could have reflected the lack of leadership demonstrated, the privileging of this personal responsibility may also point to a belief in the self-efficacy of the individuals within the project domain, if not the normative structures that framed it. The project team and project board believed that power should come from position or profession rather than experience or capability. But, generally, both groups felt this preferencing of positional power (gained from your position in the organization) and expert power (gained from knowledge or skills) was not the case in practice, reinforcing perhaps, some of the criticism of political influence over the independence of the officer branch of local government. The contradictions and tensions that developed during the project development process are seen in Figure 3 below.

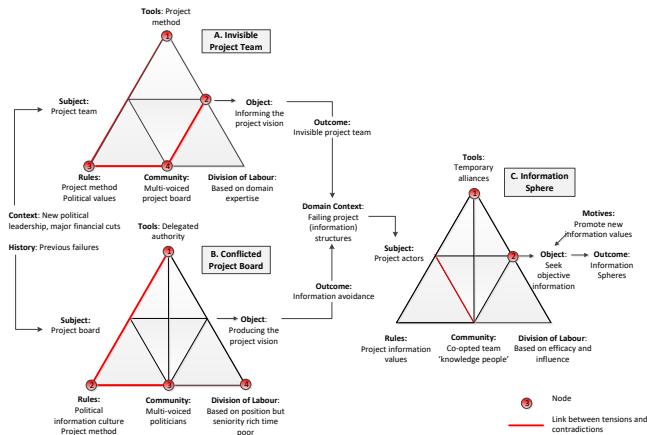


Figure 3: Contradictions and tensions leading to information spheres

The lack of a single vision (A2 in Figure 3) within the council failed to allow the project team “come into its own” and have “something to deliver against” in the face of a multilateral project board (A4 in Figure 3), and an uncertain political environment (A3 in Figure 3), where analytical processing and information validation were contradicted by a wider political narrative which preferred risk aversion and the outward appearance of unity. This in turn limited the scope for the overt consideration of alternative options for the building.

This conflict between political information values (A3 in Figure 1) and project ones (A1 in Figure 3) resulted in uncertainty about the relevance of the project team who were described as “invisible” by some project board members. Others board members argued that the team’s establishment was premature, driven by the need to be seen to be doing something in the face of public demands for change and the actual or perceived views of politicians. Other tensions arising from this conflict meant highlight reports focusing on progress, risk and scheduling, remained unread, “it’s a multi-stream report but the problem is it gets submitted to the board, no one reads it” [PB Member6]. Information was also retrofitted to suit the prevailing political view point to enable audit trail evidencing.

The team’s function as a tool and source of rational information was undermined by a lack of trust from the board who evaluated their project and political cues perceptually, relying heavily on their intuition and delegated powers, rather than the expert power of the team (B1 in Figure 3). This lack of more objective project information limited informational power of the project team and the ability to bring about change through an informed resource, who were largely excluded from board meetings.

This lack of the project team’s social presence at board meetings may have also exacerbated the situation by limiting the contextual benefits of a real-time of exchange of information both contextual and project focused. This

assumption was reinforced by the bi-polar survey and interviews which confirmed that decisions were based primarily on experience and perception. As the project manager put it, some reports were, “...more based on a gut feeling of the politicians as to what they wanted and where” [PT Member 1].

A political information culture within the council (B2 in Figure 3) caused tensions within the project organization (team and board) as actors sought to compensate for this over-reach and retain the objectivity called for by project method. This position was exacerbated by a lack of clarity and transparency on the political aims (B3 in Figure 3) and by senior service managers, appointed to lead, but who were time poor (B4 in Figure 3). Notwithstanding this, project orientated staff-built alliances to reconcile these tensions (C1 in Figure 3),

“I’m going to be kicking off a bit of collaborative work with this other regeneration team on Friday just not necessarily involving any of the [service people] people but I will bring that back in towards the end of the month because again I think this is classic” [PB Member 3].

The more uncertainty within the project the more the project actors persisted in the search for information that could break the deadlock by “going back and finding the knowledge people” [PT Member 1] (C2 in Figure 3). Seeking to find the objective information reflected the belief that the political information culture could be challenged by workable options supported by rational information,

“... members can be very strong-willed and strong-minded, and I think it’s quite easy to get batted down into a position of submission but if the facts are there then obviously it becomes a different discussion” [PB Member 6].

DISCUSSION

The research found that there are tensions between the political and rational information values and where formal project structures prevent information from being freely exchanged. Information spheres are created by groups where information is shared only with those in the sphere. This is undertaken to protect open information behavior and to counterbalances power asymmetries. These information spheres are created through strategic information behavior. Strategic information behavior is where individuals and groups (subjects) position themselves and the tools at their disposal to leverage their influence (and power) to directly or indirectly achieve a change in the information behavior in others (the objects) that promotes the information values privileged by the subject (Riley 2018).

Within project teams the visible manifestations of strategic information behavior are more apparent in domains which lack coherence and a singular project narrative to shape the information behavior of the actors within the project domain. The unevenness of the strategic information behavior processes may indicate underlying tensions within a project; hidden by the normative project structures and validation

processes. For projects to have the best chance of success it is important that these factors are identified and addressed early in the project management process so that remedial action can be taken to avoid the costs and reputational damage associated with project failure. Like Pinto (1996, 2014) and Harrison (1992), the research suggests that micro-politics is an important consideration in project success and in the design of its processes.

Unlike information grounds, spheres are not entirely serendipitous or accidental occurrences, as participants may be known to each other and have worked a particular way on previous projects together. However, spheres do create a third space (Oldenburg 1999) which is neither part of the formal protect structures and discourse and nor is it part of the usual routines of service delivery, so, in that sense it is an ad hoc tool created for the special purpose or end currently under consideration.

Information spheres are tools which create surreptitious and safe places where the power asymmetries outside the sphere are moderated in favour of those within it. Actors within the project domain area then able to use the spheres the project structure by excluding those who would otherwise be key members of the project domain. This includes people with considerable legitimate power, who might otherwise undermine the open exchange of information and ideas as envisaged by Habermas's information spaces (Habermas 1989), Chatman's small worlds (Chatman 1999) and Burnett's information worlds (Burnett 2015).

Despite the expectation that the small worlds theory would be tested in a wider variety of settings (Pettigrew, Fidel et al. 2001), this has not materialized (Burnett 2015, Dankasa 2016). Information spheres provide a missing element within small worlds theory by describing how information transference between worlds may occur where relationships between actors are transient and the distinction between the cosmopolitan or insider worldview is not as conspicuous as the theory suggests. The research also provides opportunities for the constituent elements of Chatman's theory to be tested in a workplace setting, which has been rare (Burnett 2015).

CONCLUSION

The dynamic process of generating new information and then reconciling it to the information needs of the organization is often overt, but when this process requires alignment with positions that are highly subjective, hidden information behavior is used to prevent dissonance within the imaging of the public sphere and reputational damage to those with power. This process recognizes that the organization is not a singular entity and that the notion of a project and the parent organization in dynamic alignment is merely coincidental. The fundamental organizational relationships relate to the power over social structures and how this is affected by organizational norms and reinforced by how information is managed to retain this hegemony. In this case collaborative information behavior was an overtly political act allowing

transparency and emancipation within the sphere to explore ideas without observation or sanction.

In challenging the normative view on the motive for how and why personal agency is used to enact collaborative information behavior, information spheres provide an insight into resolving problems that are too complex or difficult for an individual (Shah 2013).

Finally, this paper highlights the contribution that information behavior research is making to the wider world of work. By engaging with other fields, it demonstrates our capacity to develop new theoretical concepts, advancing the relevance and reach of the discipline in areas where theoretical grounding is limited.

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