Information behaviour in construction project management teams:

Contradictions, motivations and influencing factors

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The candidate confirms that the work submitted is his own and that appropriate credit has been given where reference has been made to the work of others.

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Abstract

This research seeks to understand how teams involved in large complex construction projects share and use information. The context of the research is project team information behaviour within early stage UK local government projects. Project tasks are commonly undertaken in a collaborative manner, modified by situational factors which give rise to informational activities which are recognised as information behaviour. However, there is limited research on collaborative information behaviour, especially focussed on activity in the complex and politically driven environment found within local government. Furthermore, information behaviour at the concept stage may be strategic as it will help to determine major decisions that may have considerable implications (e.g. financial or political), it has long term consequences and it affects the information behaviour of others through the leveraging of power and influence.

Cultural historical activity theory, underpinned by critical realism and supported by repertory grid technique and constant comparative method, is used to interpret data from two local authority case studies to address the following questions*: 'What is the information behaviour of project teams involved in local government construction projects at concept stage?' and 'What contradictions and congruencies influence the intervening variables that shape information behaviour within the project teams of local government construction projects?'*

Contradictions within the project activity system, in particular between the socio-political and the technical domains, cause dysfunctionality. Established project information structures cannot readily cope with this dysfunctionality and, as a result, information behaviour, hidden and overt, creates new structures and shapes micro-political activity not anticipated by project method. As such, the research uncovered significant tensions within the teams' work activity which caused ambiguity, leading to the creation of 'information spheres', where information can be exchanged and nurtured - sheltered from political interventions and to project teams which are invisible to the project board. Where these tensions are not present, information exchange is enabled by value alignment and trust leading to big rooms and extended project teams, where authority is distributed to enable improvements to information exchange. The research also posits a model of project team information behaviour and seeks to make modest contributions to both the information behaviour and project management canon.

Abbreviations

General

ASK	Anomalous State of Knowledge
AT	Activity Theory
CCM	Constant Comparative Method
CHAT	Cultural Historical Activity Theory
CIB	Collaborative Information Behaviour
CPM	Classical Project Management
CR	Critical Realism
CSCW	Computer-Supported Cooperative Work
HIB	Human Information Behaviour
IR	Information Retrieval
ISP	Information Search Process
MoP	Management of Projects
MS	Microsoft
PiSA	Person in Situation Approach
PM	Project Manager
PRINCE2	Projects IN Controlled Environments
RG(T)	Repertory Grid (Technique)
SIB	Strategic Information Behaviour

Case 1

CS	Community service (in the Community Department)
Hub	Community centre and library
LB	Library service (in the Culture Department)

Case 2

BAC	The Bardle Arts Centre
GAC	The Grange Arts Collective (incl. RT and BAC)
JV	Joint venture arrangement formed to share risk and pool assets
PDS	Projects Development Service
RT	The Redline Theatre
TCC	Town Centre Construction private developers and JV partners

A definition of key information behaviour terms is located in section 1.2.

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Chapter 1 - Introduction

1.1 Introduction to the Research

Cultural Historical Activity Theory (CHAT) was used to analyse data from two local authority project teams in order to explore the nature of, and factors that affect, their information behaviour at the concept stage. Central to the activity of the project team is collaborative working and this is a natural state of affairs across a wide range of activities from the sciences to arts and humanities. Indeed, collaboration is a typical response to solving problems which are too complex for one individual (Shah 2013). Yet there has been little attention paid to collaborative information behaviour of teams, groups and collaborative settings (Sonnenwald and Pierce 2000; Ford 2015).

Nonetheless, the transformation between the individual and collective activity is an important factor within group information behaviour and is also a key challenge for CHAT (Nardi 1996; Thompson and Walsham 2004). Specifically, there are no models adapted to construction teams and research on collaborative information behaviour and teamwork is limited (Reddy and Jansen 2008; du Preez and Meyer 2016).

The context for the research is local government and the construction project teams within it. The research looks particularly at the early or concept stage in the project development of two local government regeneration projects. Concept stage and regeneration projects have received little attention in the literature. Traditionally, the literature has dealt mostly with the technical and engineering aspects of the discipline with little attention being paid to public sector teams (Ernø-kjølhede 2000; Zwikael and Bar-Yoseph 2004).

The concept stage is the most important part of the project cycle as it has the greatest effect on cost, whilst uncertainty is at its maximum extent (Uher and Toakley 1999; Matinheikki et al. 2016; Pinto and Winch 2016; Aaltonen et al. 2017). It is also the stage at which the organisation's values are first translated into a vision for the project and reconciled with the situational constraints including financial resources, public opinion and other risks. For public sector regeneration projects there is no market alternative, as the financial return would make the project unviable. Even with the favourable

interest rates available to local government, financing a project with a significant deficit is challenging as the normative borrowing instruments are based on making a return on investment. At a time when critical areas of local government affecting services such as education and social care are being cut, public finances are under intense scrutiny. Also, in both cases the activities being considered for re-location (or refurbishment) are reified within the local community and major changes to their operation or location have drawn significant criticism and scepticism from local groups and some politicians.

Unlike the literature on government backed private finance projects (Badi and Pryke 2015), procurement method (Naouma and Egbua 2015), project team performance, (Bal and Bryde 2015) or building design (Sha'ar et al. 2017), early stage regeneration projects have local government at the forefront of the project development process. This brings with it certain situational factors from which the normative private sector-led project is immune, such as the duty under the Freedom of Information Act 2000 to make most information public, with the attendant risks and scrutiny that brings.

The information behaviour at this point is more likely to be strategic in that it may have fundamental implications for the project and those affected by it. The information use may affect the location of projects and, therefore, who benefits or loses or how politicians are perceived, reported on and how their reputations are seen in the eyes of voters. These choices also affect finance, with decisions having a major effect on cost. Strategic information behaviour (SIB) is also important at the concept stage as it is where the potential for influencing the outcome is at its most acute. SIB also rests on the ability to affect major decisions and the information behaviour of others. The definition of SIB, and other key terms used in this research, is described in the following section.

1.2 Definition of key terms

This section provides a definition of several of the central terms used in this thesis.

Information behaviour (IB)

The definition of information behaviour is based upon Wilson's (1981) description of information behaviour as the

> "totality of human behaviour in relation to sources and channels of information" (p. 49).

Strategic Information Behaviour (SIB)

There is no agreed definition of strategic information behaviour within the literature. For this research, SIB occurs when individuals and groups (the 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 behaviour in others (the objects) in order to secure a particular activity (outcome). It may be motivated by the information value of the subject or some other factor. As such, SIB recognises that

- Within a social setting, co-operation and competition are a manifestation of the micro-political interaction between two or more individuals
- Information behaviour activity also involves enabling others to share, seek and identify salient information on behalf of others, whether or not this reflects the primary interests of the information seeker
- Information use has strategic and profound implications beyond the information seeker(s)
- Strategic information behaviour may or may not be collaborative

This enabling imprints certain interests, values and histories on the information behaviour motive and conditionality, which can help or hinder the successful application of information behaviour activity.

Collaborative Information Behaviour (CIB)

For the purpose of this research, the following collaborative information behaviour (CIB) definition provided by Karunakaran et al. (2010) is used, namely,

> "the totality of behavior exhibited when people work together to (a) understand and formulate an information need through the help of shared representations; (b) seek the needed information through a cyclical

process of searching, retrieving, and sharing; and (c) put the found information to use" (p. 2438).

It should be noted that strategic information behaviour is not always collaborative: it can occur because of an imposed query or because of an instruction that results from legitimate or coercive power. Also, collaborative information behaviour is not necessarily strategic as it may involve low value uses or may only affect the seeker(s).

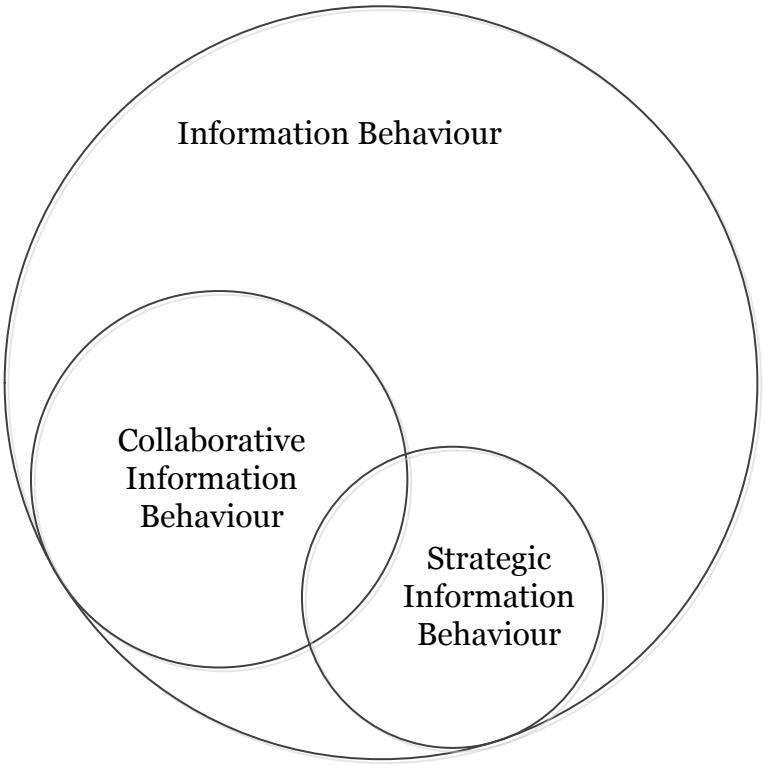


Figure 1-1: Nested Information Behaviour

Information Practice

There is no agreed definition of information practice, but this research agrees with Olsson's assertion that the distinction between 'information behaviour' and 'information practices' is a subtle one (Wilson and Savolainen 2009). Information behaviour research regards the subject of activity as the individual information user, often characterised by their cognitive structures, and privileges studies that examine how they might be influenced by social factors. Information practices, on the other hand, see information users as 'social beings' (Olsson and Lloyd 2017). This sense of the holistic viewpoint of practice and practicing in situ, is reflected in Lloyds definition of information practice as,

> "An array of information-related activities and skills, constituted, justified and organized through the arrangements of a social site, and mediated socially and materially with the aim of producing shared understanding and mutual agreement about ways of knowing and recognizing how performance is enacted, enabled and constrained in collective situated action" (Lloyd 2011, p. 285).

Lloyd's definition is used in this research.

1.3 Focus of Study

The research will seek to address the following questions using Cultural Historical Activity Theory (CHAT) and a multi-method approach to the analysis of the data. This includes semi-structured interviews, repertory grid diagrams, Constant Comparative Method and document analysis.

1. What is the information behaviour of project teams involved in local government construction projects at concept stage?
2. What contradictions and congruencies influence the intervening variables that shape information behaviour within the project teams of local government construction projects?

Despite information being central to the activities of the project team, there is only limited coverage of project team information behaviour within the canon that is not focussed on information systems (du Preez and Meyer 2016). Conversely, there has been considerable interest in project management from a knowledge management perspective (Anumba et al. 2005). Again, this has tended to focus on more intensive use of information systems and has assumed that users of those systems employ a standardised and shared set of interpretative structures to gain meaning from the available information (Boland 1987). Whether public or private focussed, most of the project research attends to the design or construction phases. These normally occur after much of the initial political tensions raised during project conceptualisation have been settled and the project vision sufficiently articulated, meeting and reconciling a range of specific financial, legal and other motives (Latham 1994). However, a more nuanced understanding of human information behaviour is needed, particularly during periods of mutability, to balance this systems-centred approach with an awareness of the historical, cultural and psycho-societal stimulus to

understand and to satisfy information needs (Johnstone et al. 2004) and a heuristic capacity for complex problem-solving where multiple stakeholder interests need to be reconciled (Sterk et al. 2009).

Most models of information behaviour (including its constituent activities) and all of the well-established models explicitly or implicitly assume that the information seeker is an individual seeking to interact with and make sense of complex information spaces (Hyldegård 2006; Saleh and Large 2011). This approach is rarely the case in praxis and, therefore, offers a limited view of how people and organisations interact with information. For reasons of expediency many of these studies are conducted within an academic setting, which, although valuable, limits its relevance to practitioners and the information problems experienced in most work contexts (Nickpour et al. 2014).

Early information behaviour research failed to explain the reasons why people engaged in information activities (Fisher and Naumer 2006). However, this changed in the early 1980s with Dervin and Nilan (1986) and Nahl's (1996) recognition of a user centred paradigm, Dervin (1992) sense-making and Belkin's (1980) Anomalous States of Knowledge. These studies put users and the emphasis on understanding their situation at the forefront of the research. Along with the emergence of ethnographic and qualitative methods, social constructionism and information behaviour in the everyday life of marginal communities (Chatman 1999) led to the identification of information grounds which privileged the setting for the exchange of information and the importance of place and context (Pettigrew 1999).

Historically much of this research owes its existence on the focus during the 1960s and 1970s on identity politics of race, gender, sexuality and the poor (Bates 2010). However, whilst these studies have explored social settings, the application of political action by the actors has not been researched. The focus has been more about the creation of spaces for information exchange, often as a result of social processes which create through serendipity a favourable setting rather than being consciously shaped by those involved in the exchange.

In terms of motive, information behaviour studies have largely focussed on information need as a trigger for information seeking and other forms of information behaviour (Reddy and Jansen 2008). Whilst these studies have

focussed on the practical and immediate information seeking behaviour of individuals and less so of teams, they have not considered the structural tensions which provide the motive for information behaviours which may be hidden or in conflict with those of the project management paradigm. The social processes which emerge from and govern the motivation of construction project teams are little researched and with regards to information behaviour no specific references were identified in the preparation of this research. There are also no models adapted to construction project teams and research on collaborative information behaviour generally is very limited (Reddy and Jansen 2008).

The context for this exploration is the activity of project management involving the public sector, specifically local government, in the UK. In particular, the research will investigate the role of the situatedness of project teams within local government in making sense of the motivating factors and the purposefulness of the information behaviour activity. In doing so, the research seeks to contribute to the wider effort to develop a deeper understanding of collaborative information behaviour in work situations. The local authorities in question all have project methodologies shaped by PRINCE2, which is best practice project management guidance widely used within the UK. PRINCE2 offers a simple framework designed to help projects runs effectively, covering the organisation and management of projects. The methodology has two key principles, namely that a project should be driven by its business case and secondly that the guidance is focussed on the information products to be created by the project (Farrar 2007). The project method referred to in this research is the widely used waterfall method which privileges planning and the establishment of a clear vision, as opposed to the agile method which promotes adaptability and adaptive planning. This exploration will also have the secondary effect of helping to inform the little researched area of public sector project management (Kasvi et al. 2003).

Given the breadth of what is described as project or project orientated activity, the study will focus on project teams engaged in the project concept and planning stages of construction projects. At the early stage the project only exists as a concept before it is planned and implemented (Haji-Kazemia et al. 2013). Williams and Samset have described this stage as the need to “do the right project” being as important as to “do the project right”, thus making the decision making processes more political than technical

(Williams and Samset 2010, p.38).

Extensive research by Flyvbjerg (2005) looking at 300 projects in twenty countries, has highlighted that project approval on major public projects is not necessarily based on the best but sometimes the worst motives, often leading to suboptimal outcomes. He argues that there is often self-delusion, deception and unreasonable political expectations that enable projects when they should not be. The concept stage, where the range of options is infinite, and the micro-politics within organisations require further exploration; micro-politics is clearly a factor in project activity (Pinto 2006). This makes the decision making processes more political than technical (Samset and Volden 2016).

The concept stage of the project cycle is especially important as it exposes the interface where the purpose of the temporal team has to be reconciled with the strategic interests of the permanent organisation. Project conception is the point at which the project brief is agreed between stakeholders and the project commissioned and the government engages the private sector to help realise social goods and services. This conceptual stage is largely confined to the client's perspective (Abdul-Kadir and Price 1995; Rodney and Lecoeuvre 2017) whilst the interface between the conceptual stage and the planning stage signals the introduction of the designers and other technical specialists, usually from the private sector.

Whilst problems may not manifest themselves until late in the project, an inadequate project brief, informed by the concept phase, is the most common reason for project failure (Marsden and Makepeace 2003). Alternatively, others have argued that "weak signals" are perceptible by gaining access to information from within the time-bound stream of events that make up projects and which can provide early warning of project failure (Ansoff 1984; Nikander 2002; Haji-Kazemia et al. 2013). However, influential reports on the state of construction in the UK have generally not addressed this aspect and research has tended to focus on the detailed design or construction stage (Abdul-Kadir and Price 1995; Tuuli et al. 2010). The fact that in local government projects the conceptual stage involves relatively limited inputs from the private sector may explain this omission whilst confirming the private sector focus of these reports and previous research enquiry.

It should be noted that at the concept stage the project team make-up may be different than in subsequent stages when the design and construction phases are reached. At these subsequent stages specialists, often external contractors, are procured to assist with these work packages, normally once the macro-political and technical spheres have reconciled into an agreed project plan. Depending on the scale of the project or the organisational arrangements of the local government body, these specialists may form part of the project team and or the design team. The latter is normally led by an (external) architect and the former by a specialist project manager (internal or external). However, from praxis it is likely that some or all of the concept stage project team members will remain involved with the project throughout its development and implementation, either as project team members or as project stakeholders – influencing and being influenced by the project.

1.4 The theoretical framework

Cultural historical activity theory (CHAT) provides an overarching paradigm, able to combine different problem areas within information behaviour (Wilson 2006). As such, CHAT has been used increasingly to understand information behaviour in a variety on contexts. These include laboratory scientists (Kwon 2017), information sharing by millennials (Mohammed and Norman 2017), social media in policing (Dunkerley et al. 2014), molecular medicine (Roos 2012), emergency responders (Mishra et al. 2011), web applications (Uden et al. 2008), physicians in clinical practice (Isah 2008; Isah and Byström 2017), voluntary organisations (Nowé et al. 2008) and mobile information systems (Allen et al. 2008).

Activity theory seeks to describe the forces and interactivity that achieve a long-term goal or outcome through the mediation of tools within a community that is governed by social organisation (division of labour) and by rules and conventions (Engestrom 1987). Activity theory is not a predictive theory (Law 2007), but as a “body of thought” (Turner and Turner 2001) it can be used to provide a description of the context and a launch point for analysis.

In activity systems, human organisations are characterised as a complex set of dynamic systems within interlocking activities. Activities are in turn goal-orientated and enacted by actors to achieve a particular outcome (Ardichvili

and Yoon 2009). Disturbances in the free following of the activity system will result in contradictions that in turn provide the motivation for the operation of the activity system (Engestrom 1999). Activity theory also highlights the need to examine and contextualise the object of the investigation within its cultural and historical setting; a perspective that is essential if the exploration of project teams is to achieve validity (Weippert and Kajewski 2004).

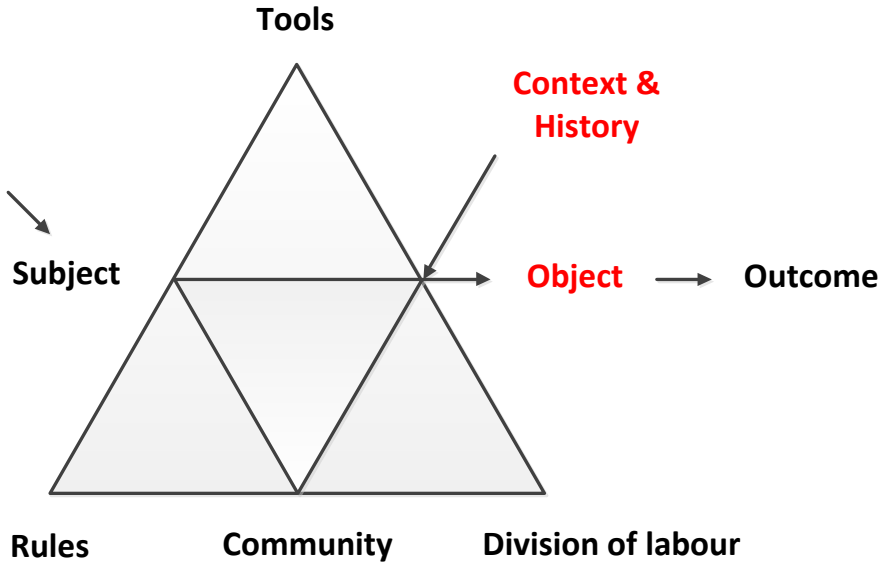


Figure 1-2: CHAT components within the project domain

As a method of analysis, CHAT is used to help unearth congruencies and contradictions within the activity systems highlighted by the case studies. Whilst focussed primarily on human activity, the ability to consider artefacts and tools as mediating devices within the activity relations enables the focus of the project/information management debate to shift from computer systems, widely adopted within construction project management, as the focus of interest towards an understanding of a range of tools as part of a wider scope of human activity (Kaptelinin and Nardi 2009). In terms of its relevance to project activities within local government, CHAT has a number of benefits:

- It is highly contextual and gives due regard to historically-specific practices, in contrast to the generalisation of standard project theory.
- It avoids a standard linear theory of development and the assumption that there is a singularly correct sequence of development or course of action.

- It focuses on collective work and workflow, as practised by project teams, as the principal unit of inquiry and analysis, providing a richer picture of individuals and groups, going beyond retrieval specialists to the cultural and political processes that exist within organisations (Davenport and Cronin 1998).
- It examines internal and external contradictions and tensions by way of understanding motive and change: it does not take unity of purpose for granted, even within the same organisational unit.

1.4.1 Justification and significance of the research

The justification for undertaking the research is grounded in academic, practice and personal reasons.

1.4.2 Academic

From an academic perspective, the proposed research differs from the existing literature in two primary respects.

Firstly, the social processes which emerge from and govern the information behaviour of construction project teams are little researched and with regards to early stage public sector project teams no specific references were identified in the preparation of this research. With few exceptions, most models of information behaviour focus on some aspects of information seeking without attending to the other variables that affect it (Wilson 1999). Also, there are no models adapted to construction teams and research on collaborative information behaviour generally is very limited (Reddy and Jansen 2008).

Secondly, there is an absence of research on project management and the public sector (Gomes et al. 2008) and there is no clear body of project management knowledge that can be transplanted from the private to the public sector (Boyne 2002). Whilst there has been a plethora of post war reports on the perceived failings of the UK construction industry, most have focussed on the construction rather than the precursor stages where there is more scope to affect outcomes (Samset and Volden 2016). This lack of previous research has necessitated a cross-disciplinary approach in order to construct a body of knowledge which is capable of doing justice to the distinctive themes within the research. Whilst project management is well defined as a practical discipline, there are few papers that contribute to its

theoretical development (Betts and Lansley 1995; Niknazar and Bourgault 2017). Although the notion of a paradigm to accommodate the breadth and complexity of projects is difficult to conceptualise (Fong 2003), the normative engineering systems approach to project management is being challenged, albeit tentatively (Kasvi et al. 2003; Niknazar and Bourgault 2017) by developments such as the Management of Projects (Morris 2013) and Making Projects Critical (Winter and Smith 2006).

1.4.3 Practice

The management of projects is of substantial economic importance and the worldwide growth in project work has been considerable across a diverse range of industries and services (Svejvig and Andersen 2015). The UK construction sector employs about 2.11m people and accounts for £103bn of the UK economy, equating to 6.5% of total economic output in 2014 (Rhodes 2015). Approximately 26% of this is directly funded by central and local government. Therefore, the public sector, through its financial and regulatory relationships with the private sector, exerts a major influence on every aspect of construction project management (Kasvi et al. 2003). Despite this, there is an absence of research on project management and the public sector (Gomes et al. 2008). Equally, much of the interfacing between the state and the construction industry occurs within the domain of local government. This is most acutely represented by the project team, whose only creation during major project developments is the production of information.

There is little research on the subject of construction error in the UK (RICS 2017). However, whilst no direct comparators exist for the public sector, research into the architectural, engineering and construction sectors (AEC) in general has suggested that up to 12% of direct construction costs are related to the correction of errors (Burati et al. 1992). According to Flyvbjerg et al. (2002), infrastructure projects have a 86% probability of exceeding their budget costs. Reflecting similar conclusions, Leach (2003) has argued project error cost can range up to 50%, highlighting the need for early error detection. More recently, research by the Royal Institute of Chartered Surveyors (RICS) found that between 10% and 25% of project costs or between £10bn and £25bn are lost due to errors every year in the UK (RICS 2017). Some of these costs arise from failures in the project team, such as a poor interface between management and design, inadequate planning, poor

communication generally and ineffective communication between team members in particular (Fageha and Aibinu 2014; RICS 2017).

Yet, whilst a number of major reports have been published over the last 50 years, the issue of projects and fragmentation within the industry and the need to develop a team approach and the information management implications within the sector have not been adequately addressed (Wild 2004). At a time when the public sector is under unprecedented pressure to reform and reduce costs, improvements in project management and the ability to coordinate efforts more effectively are essential.

Alongside the monetary cost of errors, the environmental cost of construction projects has increasingly come to the attention of society and governments across the world. The lifetime cost of the artefacts produced by projects is of particular interest during the debates on humans' impact upon the environment. In construction project management, each stage of the design and construction process provides the opportunity for waste to be created, thus placing extra impetus on the project team to be aware of their environment and the costs of their activity (Keys et al. 2000).

In addition to the financial influence exerted by the public sector, its regulatory impact should not be under estimated. The de facto standard project management methodology, PRINCE2, was developed by the Office for Commerce and Government based on PROMPT II by Simpact Systems (Pincemaille 2008). Initially designed for use by the public sector, it is now used widely by business in the UK and across the world (Siegelaub 2006).

In 2010, the coalition government launched a series of spending cuts that have resulted in the abrupt contraction of the public sector. Two main aspects of this programme are pertinent to this research: namely the estimated 500,000 job losses in the public sector and the reduction in the capital allocations to local government, thought to be up to 45% between 2010/11 and 2013/14 (Thraves 2010). So why is this research relevant at a time when the public sector's ability to procure capital projects is in free fall?

The contraction in jobs, especially in many non-statutory functions such as regeneration and economic development, is likely to mean that future staffing structures are more closely aligned to the availability of resources. This is not just in a general sense but also within the ebb and flow of project expenditure within the development and implementation of particular

projects and programmes. Given the funding changes and the contractual obligations to permanent staff, the outsourcing of project functions or the increasing use of temporary consultants in part of the construction project management process is coming to be seen as a long-term measure by local government (Wamuziri and Seywright 2005). This increase in the use of consultants and the outsourcing of construction project related work risks the demotion of in-house expertise to basic monitoring activities and the wasted resources that may ensue (Kline and Buntz 1979). Furthermore, outsourcing may further exacerbate the problems associated with increasing distance between the client and the activity needed to achieve the transformational change required to realise projects. Given the importance of proximity and 'proximisation' (Riley 2009) in the development of shared meaning through information, the need for a better understanding of the actuality of project information behaviour could not be more pressing.

Within the public sector, macro- and micro-politics are an important influence on day-to-day activity within the organisation (Pinto 2014). The wider interaction between the complex social infrastructure and human activity in organisations is part of their socio-political and technical domains (Aritua et al. 2011). Thus it has been argued that performance can only be improved if the socio-political and technical domains are brought together (Clegg and Shepherd 2007). Understanding how this performance improvement can be realised would be an important contribution to the practice of project management (Morris 2010).

Whilst projects are created to produce unique services or artefacts, the nature of the project may vary with regards to its difficulty, linearity and interconnectedness. Where project dependencies involve known knows in a stable political environment, for example, the challenge and dynamics involved in pursuing project goals is very different than when the situational characteristics are more unpredictable and non-linear. In this research the case studies involve complex projects as defined by Bakhshi et al. (2016, p. 1201),

> "complex projects consist of ambiguity and uncertainty, interdependency, non-linearity, unique local conditions, autonomy, emergent behaviours and unfixed boundaries".

1.4.4 Personal

On a personal level, the researcher has managed project teams involved in physical regeneration since 1997 and has been exercised by the apparent personalisation of information, despite the anonymity of the normative project methodologies and the quest for assurance from afar. This implicit focus within the tasks and routines within the praxis of project management contrasts with the formal and explicit nature of many project decisions and the information presented to inform them. This dissonance between the way information is used to inform, validate and determine the progression of projects led the researcher to question how information behaviour was constituted within the project team, what the motivation of those involved was and how could that affect the information paradoxes within projects.

1.5 Chapter Outline

The outline of the chapters within this document is as follows: chapter 2 explores the theoretical perspectives on information behaviour. In addition, the chapter discusses the nature of the project team, in general and with specific reference to local government in the UK. The chapter also discusses the factors that might affect information behaviour activity of project teams. It concludes with an analysis of the theoretical perspective gained from the review and the identification of the gaps within the literature that this research seeks to illuminate and inform.

The methodological positioning of the research and the justification for the use of CHAT and Critical Realism is addressed in chapter 3. Chapter 4 discusses the case study method. Chapter 5 and chapter 6 describe and analyse the case study findings for cases 1 and 2, respectively. Chapters 7-9 discuss the research findings alongside extant theory, dealing with, in turn, a model of project team information behaviour (7), information spheres (8) and hidden information behaviour (9). Finally, chapter 10 deals with the contribution, limitations and ideas for further research.

Chapter 2 - Literature Review

2.1 Introduction

Central to the thesis is how project team information behaviour is constituted during the concept phase of public construction projects. The review, therefore, will explore the disciplines in which the thesis is situated in order to identify and elaborate on the key questions and discussions connecting and locating the research questions to the literature. In particular, the review is aimed at identifying what is known of the information behaviour of project teams and at helping to establish how the research will contribute to theory. The review also seeks to identify what may be the important variables relevant to the topic, whilst establishing their context and scope in order to generate a new synthesis for the topics under investigation (Hart 1998).

The initial literature search returned limited findings, despite the systematic search approach being used. As a result, the following approaches have combined to make the review coverage more exhaustive:

- citation chaining
- manual 'searching'
- serendipity finds, information found to be interesting or relevant to the research, unconsciously encountered when searching or browsing another information source (Ford 2015)

together with a selective focus on four primary information behaviour theories:

- Wilson's Model of Information Behaviour (2000) – due to the scope of its treatment of the constituent parts of information behaviour
- Allen's (1997) Person in Situation Approach – because of its person and group-centred approach to understanding information behaviour
- Kuhlthau Information Search Process (1989) - due to the relationship between it and the stages of the project management process and the construct testing emerging from George Kelly's personal construct theory, an adaptation of which is used in the analysis (Kelly 1991)
- Chatman's (1991) Small World Theory – due to its focus on group dynamic and the transactional relationship between insiders and

others. Also included are Fisher's (2004) Information Grounds and Burnett's (2015) Information Worlds – both of which seek to apply or reconceptualise aspects of Chatman's work by foregrounding place and by taking Chatman's principles into a wider societal setting, respectively.

Whilst the findings are generally presented from a naturalistic perspective, the critical realist standpoint taken by the researcher acknowledges that no reading of the literature will be value-free. Therefore, details of the researcher's perspective (see 4.11.5) are relevant in considering how this might have affected the presentation of the review. The chapter outline is as follows:

- Information behaviour (section 2.2)
- Projects and project teams (section 2.3)

The chapter concludes (section 2.4) with an evaluation of the current literature and highlights the gaps in knowledge that the research questions seek to address.

2.2 Information Behaviour

Pettigrew, Fidel and Bruce's (2001, p.44) definition of information behaviour as, "the study of how people need, seek, give and use information in different contexts…" contrasts with that of Wilson's (1999, p.249) definition as "those activities a person may engage in when identifying his or her own needs for information, searching for such information in any way, and using or transferring that information". Although similar, the differences between them speaks to the tensions between the social activities that help to frame context with the focus on the individual information seeker and the cognitive processes that determine information behaviour. However, for the purposes of this research Wilson's original and broader definition is used as it avoids making too many a priori assumptions (e.g. information needs are inextricably linked to the seeker),

> "totality of human behaviour in relation to sources and channels of information" (Wilson 1981, p.49).

Most information behaviour research has either focussed on the psychological or the social (Fidel et al. 2004). The psychological method

focusses on personal attributes and examines the cognitive motivations which are generalisable and independent of context (Choo et al. 2000; Fidel et al. 2004; Nickpour et al. 2014). The psychological method also tends to focus on certain sections of information behaviour, rather than a full sequence of activities (Niedźwiedzka 2003). This has approach has been criticised, with notable exceptions including Dervin's sense-making model (1983) and Wilson's (1999) general model of information behaviour, as lacking realism, an understanding of context and the factors that define problem definition (Saleh and Large 2011). The social approach, in contrast, emphasises the effect of social context on the information behaviour, regardless of psychological attributes such as an individual's information need (Chatman 2000; Poltrock et al. 2003; Talja and Hansen 2006).

2.2.1 Wilson's Theory of Information Behaviour

Wilson's original information behaviour model, first presented in 1981, was derived from his analysis of information behaviours of social workers and their managers, carried out as part of the INISS research project (Wilson 2007). Whilst the original model was not built on any existing models, it was influenced by general systems theory and phenomenology. This mixture of systems theory and interpretivism provides an interesting juxtaposition with what might be seen as the semi-structured nature of project management (O'Leary and Williams 2008). Wilson's revised information behaviour model presented in 1999 (see Figure 2-1) expanded upon Ellis' information seeking model, along with the concepts of information need, exchange and use in a linear sequence designed to provide information seeking behaviour, passive attention and passive, active and ongoing search behaviour (Sonnenwald 1999).

In the model, information need provides the initial basis for potential action (see Figure 2-1). The stimulus for the action is tacit, personal and ineffable and can only be hinted at through the actions of the knower. This stimulus or motive for the seeking has been hinted at by concepts such as expectancy theory (Vroom 1964), which is based on preferred outcomes and the likelihood that a particular act will follow it. However, the need for information is insufficient in itself to lead to action and Wilson posits that there must be an attendant motive to compel the subsequent information behaviours.

The decision to take action must be activated by stimuli; in Wilson's case stress/coping theory originally developed by Folkman (1984) to describe the cognitive and behavioural actions to help manage or minimise stressful transactions in the relationship between the person and their environment. The decision whether to actually seek the information is affected by several intervening variables. The decision to undertake the search itself is prompted by risk-reward theory (Settle and Alreck 1989) and self-efficacy theory (Bandura 1977), informed by Rotter's (1966) concept of the locus of control, as the central tenet of stimulus response theory (Rosenstock 1974).

The self-efficacy route to empowerment is rooted in the psychological perspective (Kariuki and Murimi 2015) and in particular social learning theory (Bradley and Roberts 2004). Conger and Kanungo (1988) argue that this psychological approach involves a number of factors that lead to increased intrinsic motivation and propose four influences that shape cognition, namely the locus of control, self-esteem, access to information and rewards (Thomas and Vethouse 1990). On a similar basis, Petter et al. (2002) have suggested seven dimensions of employee empowerment: power, decision-making, information, autonomy, initiative and creativity, knowledge and skills and responsibility. In organisational terms, self-efficacy is useful in that it is believed to be a predictor of career choice, job satisfaction, extra effort and leads to a particular focus on activities where actors perceive themselves as being competent (Bradley and Roberts 2004). A number of studies support the theory that team efficacy follows the same pattern as self-efficacy (Bandura 1993; Gully et al. 2001). However, Gully et al. (2001) has argued that this depends on the extent of team interdependence, with others arguing that leadership empowerment is related to information sharing and team efficacy (Srivastava et al. 2006). An alternative situational approach centres on the sharing and distribution of power, information and rewards as a way to shape motivation and improve performance and has much in common with French and Raven's taxonomy of power (French et al. 1959). Those criticising this approach argue that managers learn to cope with the loss of power whilst failing to attend to issues of empowerment from the perspective of the employees (Kariuki and Murimi 2015).

Wilson's model is important as it highlights the role and need for qualitative factors to be considered in order for information behaviour to be modelled. Whilst Wilson (1999) has said that qualitative methods are not an essential

or integral part of the model in itself, it was developed in response to the prevailing positivistic research model which had failed to take account of the human information behaviour. However, the systems and interpretivism influences mentioned earlier are “not overt”, reflecting Wilson’s purpose over method maxim, and the generally atheoretical approaches to information management research (Pettigrew et al. 2001).

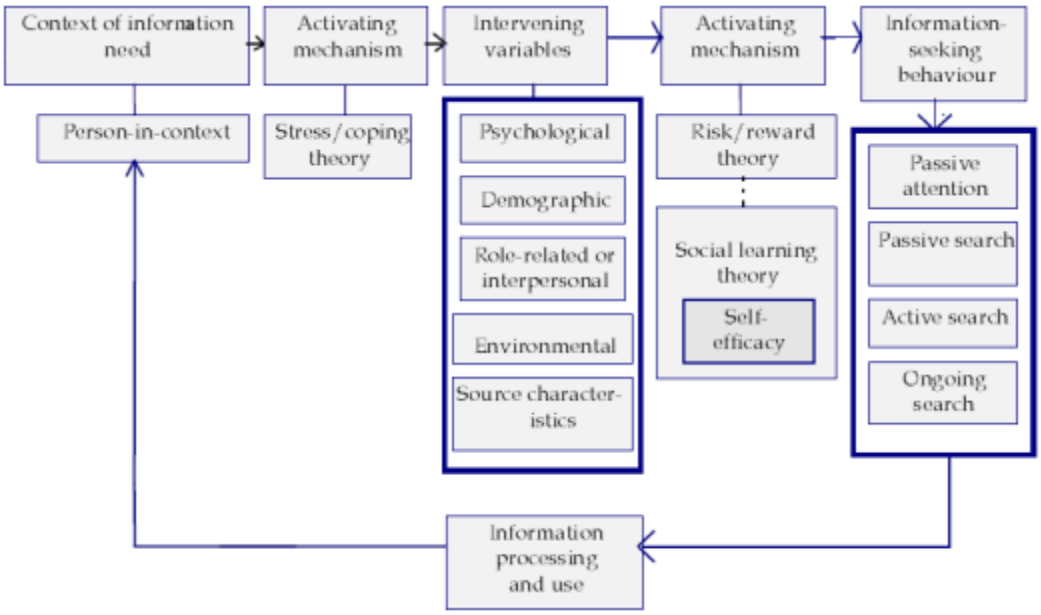


Figure 2-1: Revised General Model of Information Behaviour (Wilson 1999)

Wilson’s model seeks to provide a general view of information behaviour and therefore was never meant to be representative of the specific information activities within project teams. Notwithstanding this focus on the information behaviour of the individual, it does offer the opportunity to contrast it with the social activity of teams. Firstly, it has to be said that the Wilson model does not ignore social activity. Implied within the idea of the person in context affecting the need for information, together with the environment and inter-personal interactions affecting the intervening variables suggests that information behaviour is not a solitary activity.

However, in a project team setting the act of information seeking, its use and its attendant motive is likely to be a collaborative as well as a social one, with different individual behaviours contributing to the information behaviour of the team as a whole. Also Niedźwiedzka (2003) has argued that Wilson’s “intervening variables” are more properly conceptualised as part of context

itself and as such the activating mechanisms are not purely individual in nature but may also arise from the complex and interdependent needs of others, including asking others to seek information on your behalf, as illustrated by Gross' imposed query model (Gross 2001). Furthermore, project teams are tasked with delivering distinctive projects with decision-making that is integral to their structure and the priorities of the parent organisation, requiring complex feedback and feedforward routines (Love et al. 2002) that are not explicitly featured in Wilson's model.

Research by Latham and Seijts (1999) suggests that the achievement of proximal goals (preliminary performance measures whilst working toward the distal goal) is related to an informational explanation, rather than a motivational one associated with a more general commitment to achieve a particular distal goal. As such, proximal goals combined with feedback and self-efficacy are more likely to result in strategies focussed on optimising task performance (Latham and Seijts 1999).

Elsewhere in this review, the importance of the engagement with stakeholders and other interested parties is highlighted as being pivotal to the achievement of project goals (Karlsen 2002). As a result, any new model of project team information behaviour must consider the perceptions of those within and external to the project team, together with their attendant interests and influence over the information outcomes, given that activating mechanisms are social in nature with imposed queries or information seeking tasks given by one person to another (Gross 1995). As such, there is scope for the model to go beyond focussing solely on the information behaviour of the information seeker and to explore other facets of information behaviour, such as the type of information and the qualities of the informant (Morrison and Vancouver 2000).

Wilson's model refers to activating factors, including risk reward theory, but Schmitt, Cortina, Ingerick et al (2003) have argued that personality traits are the main predictor of motivation. Tett and Burnett (2003) elaborate on this proposition by arguing that people seek, and are satisfied with, tasks that allow them opportunities for expressing a wide variety of personality traits. Specifically, they argue that the variance in 'trait-expressive behaviour' is maximised in situations where traits are not tolerated by colleagues and where they are tolerated extrinsic rewards subdue individual differences in intrinsic rewards associated with trait expression (op. cit.). This implies that

the risk / reward theory can be blunted in group situations.

In conclusions that support Social Identity Theory (Tajfel et al. 1971), Haslam et al. (2000) have suggested that where an actor's personal identity is central to the need to self-actualise then personal self-esteem becomes dominant, while where social identity is most important it is the relatedness, peer recognition and attainment of group goals which are key. Within projects there is also a greater emphasis on the production of a particular artefact within a given time and specification influenced by the stakeholders according to their interests and influence (Newcombe 2003).

This task outcome of the information behaviour process is implied in the "source characteristic" of Wilson's intervening variables, but requires a greater resolution given the effect of the nature of the task on project performance and information behaviour. As such, Wilson's intervening variables should be regarded as a part of the context, whether or not it seeks to reflect individual or collective information behaviour (Niedźwiedzka 2003).

2.2.2 Allen's Information Needs: A Person in Situation Approach (PiSA)

Research has not generally focused on the information behaviour of teams, groups and collaborative settings (Sonnenwald and Pierce 2000). Nonetheless, the transformation between the individual and collective activity is an important factor within group information behaviour. Allen's Person in Situation Approach (PiSA) starts with the assumption that two types of information needs affect an individual, one relating to the individual personally and the other to a group of which they are a member (Shoham and Strauss 2008).

In response to what the individual sees as the distinction between situational and individual user information needs, Allen (1997) developed a problem solving model to help understand how these variables interact to affect individual and group 'information-related behaviour'. In the PiSA approach, individual information needs arise from how personal knowledge structures influence cognition and activity. In particular, needs are motivated by a failure in the individual knowledge required for perception or the identification or selection of alternative courses of action.

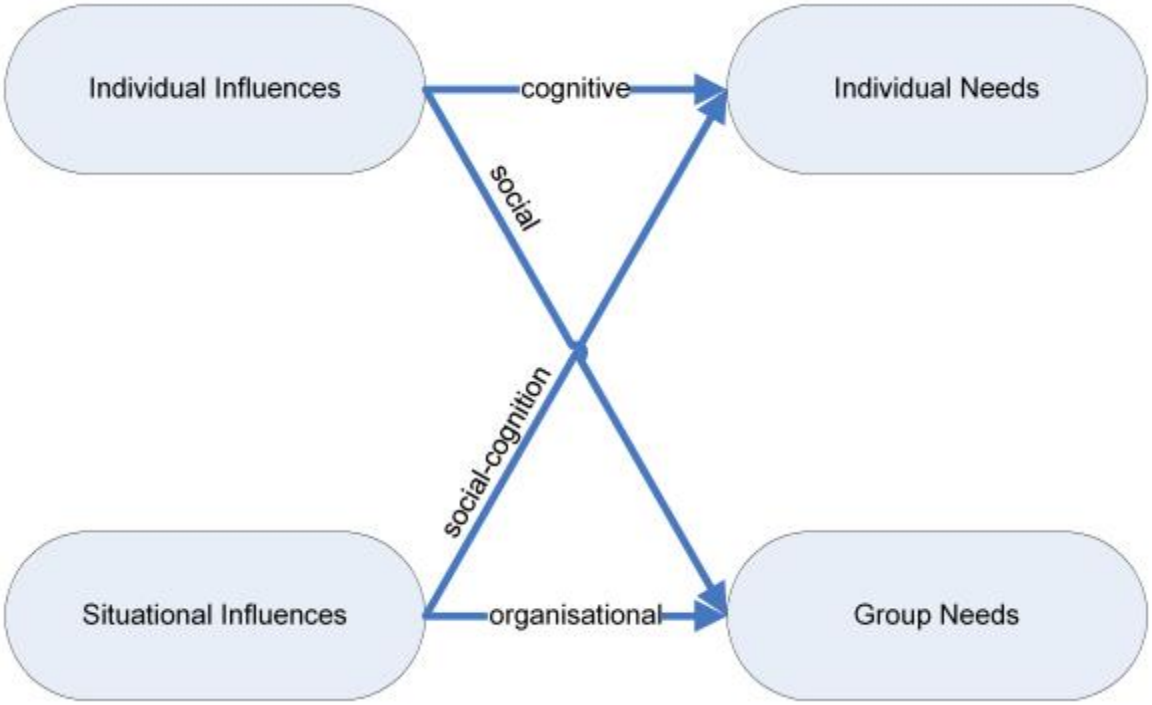


Figure 2-2: A Person in Situation Approach (Allen 1997)

2.2.2.1. Information Needs: A Cognitive Model

A failure of perception occurs when the individual's knowledge structure has no experiences of, or no way of using heuristics to fill that knowledge gap. In addition to this, partial failures in cognition can occur when an inappropriate knowledge structure is accessed and utilised in an inappropriate circumstance. The recognition, or reality check, that confirms the perception is incorrect provides a motivation for information seeking. Failure to find alternative solutions may result in the assumed behaviour being undermined by the response of others. Therefore, whilst Allen's individual influences focus on a single user, they are continually immersed within the social world and the difference is sometimes difficult to distinguish (Allen 1997). The individual response to this dissonance may be in the form of information seeking, trial and error, and forming associative links to other information gathering exercises. Once a number of alternative actions have been developed, and assuming no single course of action is indicated by existing knowledge sources, selection may be guided by cost benefit analysis, heuristics, risk minimisation or by further inquiry into the options and their consequences.

2.2.2.2. Information Needs: A Social Model

From a social perspective, it is assumed that two people from different backgrounds, but in the same situation, will behave similarly. However, failures in perception may result when a person is transplanted to a new situation. While in the new situation, perhaps due to culture or values constraining the use of existing knowledge structures, working out what to do is largely interactional (Allen 1997). For example, the use of trial and error is only capable of being judged in relation to the response from the social context around the activity. Actions such as this and observing others provide cues from which new knowledge constructs can be developed, for example by acting as a sounding board for judging trial and error strategies, or by providing observed comparators with similar situations. Therefore, actions such as information seeking, and its consequences, are mediated by the social context of the information seekers (Allen 1997).

2.2.2.3. Collective Information Needs: A Social Cognition Model

In groups, individual and group information needs occur concurrently. However, group learning needs may arise that are different to individual needs and there may be dissonance between individual and group knowledge constructs. For collective perception to occur, members of the group must be aware of both personal and group known knowns. This may start with one member's perception of a particular problem; he or she then has the responsibility to share with and to persuade others that their perception is a valid one. This process of negotiation and influencing highlights the role of the micro-political activity within the group and the notion that failures of collective perception can occur due to external realities, as well as a failure of internal group processes. Where the collective failure is due to a lack of identification of alternative choices, this may undermine collective behaviour. Project organisations often seek to overcome this by seeking to share good practice or assume it is inherent in the actuality of the project (Jeong et al. 2006). However, within projects this process can be undermined by the secondary nature of project learning itself (Sense and Antoni 2003), because new project teams tend to be created for each new project and because projects are unique which limits the application of pre-determined knowledge.

Where information seekers, boundary spanners and project gatekeepers are able to identify alternative actions these may fail to be adopted by the group

unless the solution fits its collective perception of the problem. However, this can be avoided if they are prepared to re-negotiate their collective perception of reality. Whilst this may make the information seeker appear dogmatic, the inflexibility comes from the collective nature of the information search – not the individual seeker. As such, Allen (1997) has suggested that as groups tend to submerge individual differences, information seeking and the selection of alternative outcomes arising from collective memory is likely to be easier than for individuals (Murray et al. 2004).

2.2.2.4. Information Needs: The Organisational Perspective

Groups are influenced by the wider social context beyond team and individual knowledge structures. Group work is reliant on gaining political consensus within the group that, in turn, is set within the wider norms of the organisation. As such, Allen posits that the organisation's values and rules shape information behaviour (Rosenbaum 1996). Groups who share these corporate norms will, as a result, share knowledge structures and will also experience information needs in a similar way (Allen 1997). However, the development of a single consensual opinion of the problem situation depends on the organisational situation of the group. Despite the organisational values and shared knowledge structures, anomalies can occur; in these situations, where a reality check is needed, information seeking can be an important part of a collective problem resolution. Alternative actions are situationally constrained and, whilst it is possible to learn lessons from other similar scenarios in an attempt to induce an alternative, the organisational embeddedness of each situation makes information seeking the easier course of action. Manuals, tools and experienced others may assist in option selection; failing this organisational norms, history and policies may also suggest alternatives. However, information about action-consequence links is likely to be important, provided these are analogous to the organisational setting.

Although collective information avoidance is not specifically addressed within the PiSA, it is assumed that this behaviour could manifest itself within the micro-political activity of the team. Moreover, the avoidance of information seeking could simply be a method of placing greater reliance on the use of collective memory or intuitive approaches, say in the case of a project sponsor. In that situation, information is not specifically being avoided but a choice is being made between intuitive and empirical evidence,

between knowledge and information.

However, Allen's model does not specifically deal with multiple organisations where cultures and value systems are radically different, such as private firms and public authorities. As a result, the model may exacerbate the problem of a one-size-fits-all approach to cultural dissonance (Williams and Lewis 2008). Also, distributed teams are a common feature of business and project working and the ability to share meanings and implicit knowledge across them is problematic (Woo et al. 2005).

In these situations, the generation of trust and camaraderie necessary for effective information exchange (Disterer 2001) has to emerge without the benefit of proximity as a trigger for developing shared norms. As such, group identity becomes increasingly important as a substitute for proximity (Saunders and Ahuja 2006). The need for joint channels of communications and a shared language typically means that the same professions are represented in different organisations within the same project team. These professional symmetries and other socio-cognitive and historical shared experiences can also help to bridge the gap between organisations and groups. However, all of these factors, in addition to the conflicting identities caused by geographical dispersion, result in multiple identities that affect how team members locate themselves within teams and other contexts (Ashforth and Mael 1989).

Allen's model puts much store on the use of collective and individual knowledge, both in the generation of alternative and in the selection of optimal solutions. This assumes that memory and past events have currency in present times or in an anticipated future. As Weick (1977) noted, lessons from the past are always dated and if knowledge provides the lens through which new information is filtered and privileged, then this reliance on the past threatens to reify previous mistakes whilst suppressing innovation. Whilst it would be naive to assume that all new information should take precedence over what is known, the model fails to articulate how, and under what circumstances, one would take precedence over the other or indeed how they could be specifically combined to create a new understanding to improve problem framing and problem solving.

2.2.3 Kuhlthau Information Search Process Model (ISP)

Kuhlthau's ISP model provides an actor perspective view of information

seeking, stressing the importance of affective behaviour on the search activity (Kuhlthau 2004). The model incorporates six stages, representing the affective, cognitive and physical experiences at each stage (see Figure 2-3). Although not explicitly included within the original ISP model, Kuhlthau (2010) notes after MacMullin and Taylor (1984) that the choices made by the user are also affected by environmental considerations – such as prior knowledge, personal knowledge, the specific of the problem being considered and the time constraints.

The interplay between these affective, cognitive and physical experiences and the choices made by the user provide the motivation for moving through the six stages (Hyldegård 2006). Given the lack of research focus on the holistic needs of the user, Kuhlthau's model sought to bridge, or at least to inform, the gap between information systems and the user's process of information seeking. The six stages begin with initiation when the user becomes aware of their lack of knowledge or understanding, leading to feelings of uncertainty (Kuhlthau 2010). The selection of the problem is then identified, giving rise to a temporary euphoria and optimism that prompts the user to begin the search. Where selection is delayed, anxiety is likely to grow until a choice is made.

Kuhlthau's work is based on the Kelly's Personal Construct Theory (Kuhlthau 2004), which considers the influence of feelings on the process of meaning construction during information seeking. This is especially relevant during the exploration phase, which uncovers inconsistent or contradictory information – leading to increasing uncertainty and reduced confidence. Thoughts centre on becoming sufficiently informed about the topic to form a person perspective, implying a tacit component at this stage. Kuhlthau (2010) notes that at this point the seeker's inability to express exactly what information is needed can make communication difficult. Feelings of uncertainty at this stage may be exacerbated by a lack of consistency between the seeker's personal constructs and the newly unearthed information. However, this uncertainty is then reduced as formulation takes place and a focussed perspective is identified. This phase involves identifying and choosing ideas within the information that form a 'focussed perspective' of the topic, something Kuhlthau (2010) equates to a hypothesis in the process of construction.

When the information relevant to the focussed perspective is collated during

collection, engagement with the search deepens, in part due to increasing confidence and effectiveness of the information transaction between the subject (seeker) and the information system. Emphasis is given to defining, broadening and, crucially, to supporting and verifying the focus as engagement and interest in the topic and the search project deepens. Finally, presentation completes the search when a new understanding is obtained, enabling personal learning and knowledge to be communicated in a suitable format for others to consume. Feelings of relief or satisfaction may be experienced if the search proves successful, or disappointment if it does not.

The importance of uncertainty within the information search process has been highlighted in numerous studies (Kuhlthau 1991; Afifi and Weiner 2004; Murray et al. 2004; Orr and Sankaran 2007) and it forms the primary motive for the ISP. As the earlier overview of ISP suggests, the process is typified by peaks and troughs; certainty and uncertainty as the subject proceeds from initiation to presentation. Kuhlthau (2010), in exploring the role of uncertainty, has identified six uncertainty corollaries, namely:

Process - the construction of personal knowledge as the subject pursues both understanding and meaning from the information they encounter.

Formulation - developing and extending the definition of the topic during the information encounters so that the focus of the enquiry enables movement from uncertainty to understanding.

Redundancy - the dynamic interaction between redundant (or expected) information, too much of which can lead to boredom while too much unexpected (or new) information leads to anxiety and tension.

Mood - after Kelly (1991) - relates to the attitude of the subject, whether open or invitational and hence receptive to search possibilities, or closed if possibilities are seen to be unattainable. Kuhlthau (2010) suggests this stance will generally shift from open to closed during the ISP. However, the stance also relates to the information orientation of the subject and their attitude, whether exploratory or conclusive, which in turn could depend on factors such as frustration, confusion or stress avoidance (Heinström 2003; Hyldegård 2006).

Prediction – the choices during the ISP depend to some extent on the subject's predictions of what will happen in response to a given action.

Interests – interest, motivation and engagement in the search project gains momentum as personal knowledge is constructed during the ISP.

However, few people engage in information seeking behaviour in relative isolation as pictured by ISP. Even with the advent of networked information systems, there is a collaboration (e.g. CSCW), whether in providing the motive, such as a work colleague, or in moderating and mediating the flow of information to the seeker. This is especially the case in team settings, where the information being sought is a part of a collective endeavour, albeit it with decomposed tasks which have a responsibility that is devolved to the individual team members. Even in that case, the task outcome of one person is shared and therefore has a multiplicity of networked collaborators. This is particularly the case in capital projects where the information provided must be especially trustworthy, capable of challenge and relevant to the task being undertaken, given the substantial reputational and financial risks attached.

Group activities can mask or enhance dispositions and structures compared with those experienced by individual actors. In studying the applicability of Kuhlthau's ISP model on group uncertainties, Hyldegård (2009) found that groups experience only low levels of uncertainty in addition to medium to high levels of confidence at the start of an information gathering process as part of a student assignment. Whilst Hyldegård's research does not seek to explain the phenomena, he suggests that Fiske's (2004) findings that people tend to assimilate the self into a group perspective provide a framework to guide cognition and action.

In seeking to identify real life applications of ISP, Kuhlthau (2010) has argued that the goal of information providers is less about reducing uncertainty and more about supporting the user's construction. In ISP this is facilitated through the zone of intervention and is modelled on Vygotsky's zone of proximal development; the gap between solo developmental attainment and what could be achieved through collaboration through a mentor or more capable peer (Vygotsky 1978). However, this intervention seems at odds with normative impetus for seeing information seeking in the Kuhlthau ISP model, where a gap in knowledge triggers a need to search for information as a part of the problem-solving process. Kuhlthau's progression to a more sophisticated trigger for information need acknowledges that information seeking is part of a wider dynamic process dependent on both the context and the individual actor performing the search (Solomon 2002;

Heinström 2003).

The exploration phase in Kuhlthau's ISP model has similarities with the development stages in project management. These development stages involve moving from the strategic need identified by the mandate, the hypothesis formulated at the concept stage, the tentative solution identified by the design and the implementation of that solution during construction (building) and finally to the occupation of the building (in operation). Each of these stages serves to narrow the cognitive focus, to move from uncertainty to completion and to narrow the search for information from an exponential position at the initial stages to a search for pertinent information as the project nears completion (see Figure 2-3).

In project management a settled concept and information need is important because it develops the rationale for and justification of the activity as a whole. It does this whilst establishing concrete definitions in space, time, quality and resources that will guide the brief for the building designers or architects, irrespective of whatever other intervening factors are experienced during the information seeking or project development process. Whilst the project mandate begins this process by setting out the basic premise for the project activity, it is only at the concept stage where the needs of different stakeholders is rationalised and reconciled within wider corporate or group objectives into actionable activity, a plan for information behaviour.

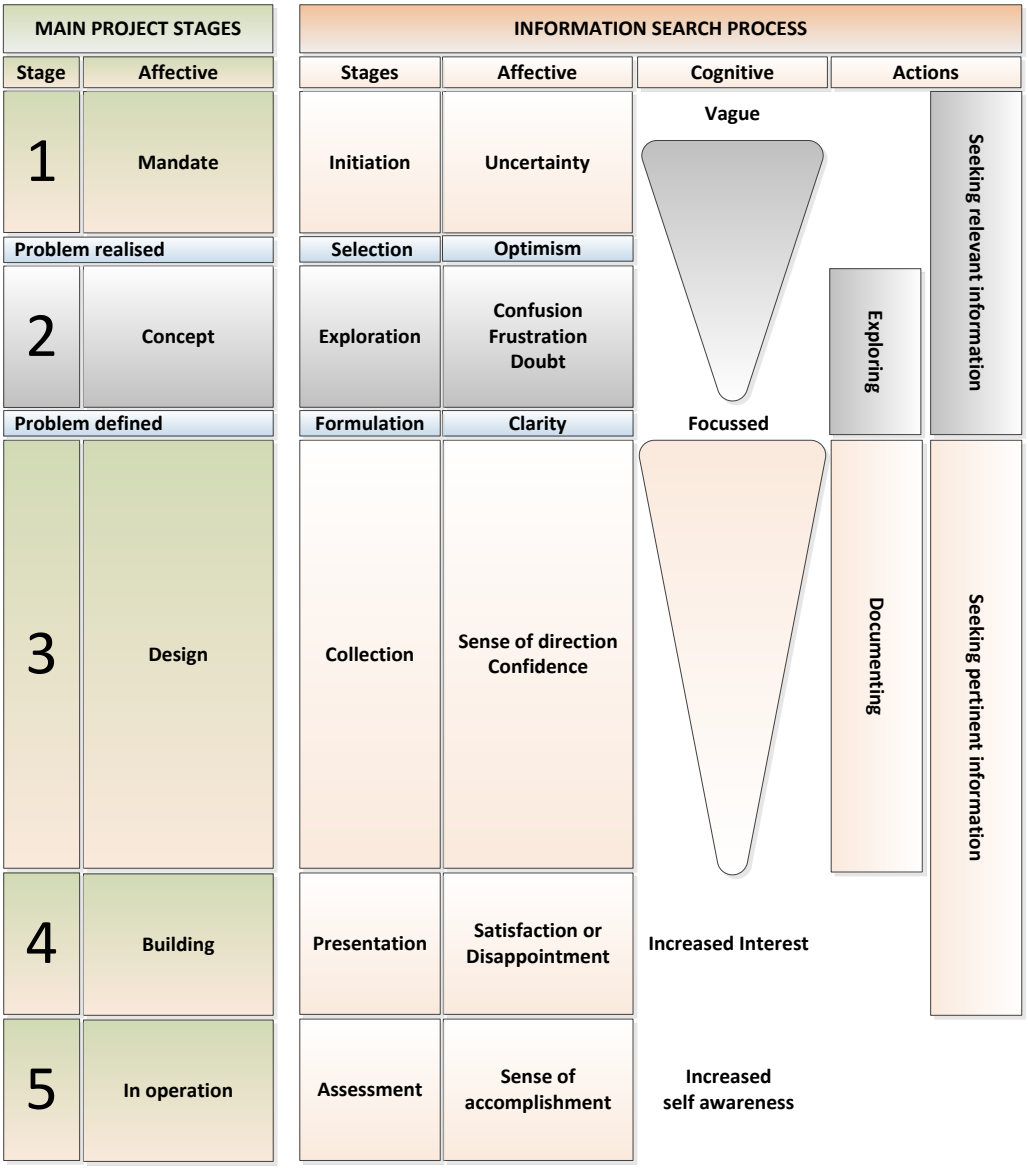


Figure 2-3: Project Management Stages and Kuhlthau's ISP Model (Adapted)

2.2.4 Dervin's Sense-making Methodology

Dervin's (1983) sense-making methodology emerged from the field of communication theory. It posits that people and groups are always attempting to reach a goal, or set of goals, these goals shift in time and space and are implicit, conscious or perceived. In this situation, actors will attempt to reach the goal until a barrier is reached. In order to resume their journey across the gap and reach their goal, they must design a strategy for moving around, through over or away from the barrier (Donzelli and Iazella 1999). The actions that are taken at the point of confrontations with the obstacles are sense-making actions.

In essence, sense-making theory provides a metaphorical bridge between situation and outcome and thus satisfying an information need. Dervin's approach was not limited to a single person or specific query to be resolved; it took a holistic view of our whole life state. Dervin's (2005) sense-making theory is an approach designed to make sense of the chaotic and orderly states of being within our reality as we constantly make and un-make sense of our reality and what we experience (see Figure 2-4). In this context Dervin uses the bridge as a metaphor, with the gap being the problem space; the person attempts to bridge the gap so that he/she can continue on their journey after the bridge (Ford 2015).

The methodology has four basic constituents: 1) a situation which defines the context within which information problem spaces arise; 2) the gap which is the difference between the desired and current situation; 3) the outcome, which is the consequence of sense-making and 4) a bridge that seeks to close the gap between the current situation and the desired outcome.

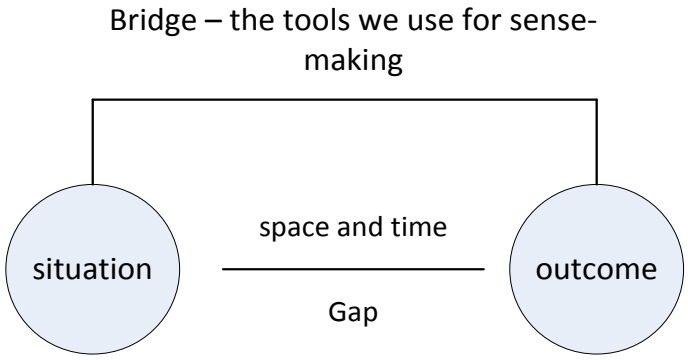


Figure 2-4: Dervin's sense-making Model (from Wilson 1999)

By seeking to better understand communication from a dialogic viewpoint, sense-making seeks to avoid the narrow focus on the message content and its fidelity, in order to make sense of the chaotic and orderly situations within our reality (Foreman-Wernet 2003). Sense-making is a fundamental aspect of all human behaviour as we consciously or unconsciously seek to construct meaning by bridging gaps between our knowledge and perception. The strength of the model lies in the questions it elicits from the actor and observers that can reveal the nature of problematic situations, in particular how information can bridge the gap between current and desired states (Wilson 1999).

Thus sense-making conceptualises human information behaviour from the perspective of the actor engaged in a series of unending gap-bridging

through a series of interactions where time and space are related through context. Information is not regarded as independent of human beings, as it is a product of humans' observation in physical and psychological time and space (Savolainen 1993; Foreman-Wernet 2003). Whilst most other models of information behaviour treat information as an external entity (Savolainen 1993), Dervin regards it internally through cognitive reasoning within the human mind (Dervin 1992).

2.2.5 Collaborative Information Behaviour

The information behaviour models discussed in sections 2.2.1 to 2.2.4 are well regarded within the information behaviour cannon. Yet they all focus on, or stem from, a single information seeker. Collaborative information behaviour is a typical part of everyday life in and outside of the workplace, yet until the last 20 years models conceptualising information behaviour have focussed on the individual (Perez 2015).

The term collaboration is used in a variety of settings and is sometimes used interchangeably with similar words which have their own distinct meaning. Terms such as collaborative information seeking (Hertzum 2008; Shah 2009; Paul and Reddy 2010), collaborative information sharing (Widen and Hansen 2012), social information behaviour (Jaeger and Thompson 2004), social searching (Donath and Robertson 1994; Evans and Chi 2008), collaborative information synthesis (Blake and Pratt 2006) and collaborative information behaviour (Sarcevic 2009; Lin et al. 2010; Karunakaran et al. 2013; Perez 2015) have all been used in this context.

Poltrock et al. (2003, p.239) have defined collaborative information behaviour as "activities that a group or team of people undertakes to identify and resolve a shared information need". This suggests that the process of collaboration is highly interactive, largely intentional and likely to be mutually beneficial (Shah 2013). The definition includes two critical elements of collaborative information behaviour - working together collaboratively and resolving information needs, which includes seeking, retrieving and using information (Reddy and Jansen 2008). In public construction projects these activities are more likely to be conceptualised as collaborative working to solve a problem need defined by the organisation. As such, Talja and Hansen's (2006, p.114) description of information behaviour as "an activity where two or more actors communicate to identify

information for accomplishing a task or solving a problem" may be more relevant. The definition recognises the collaborative nature of the work but detaches the information need from the individual seeker. However, for the purpose of this research the more comprehensive collaborative information behaviour (CIB) definition provided by Karunakaran et al. (2010) is used:

> "the totality of behavior exhibited when people work together to (a) understand and formulate an information need through the help of shared representations; (b) seek the needed information through a cyclical process of searching, retrieving, and sharing; and (c) put the found information to use" (p. 2438).

The definition promoted by Karunakaran et al. (2010) builds upon Wilson's (1981) definition of information behaviour as the "totality of human behaviour in relation to sources and channels of information" (p. 49). Wilson regards information searching, information seeking, and information behaviour as a hierarchy. Wilson's definition also includes active and passive information seeking and information use, recognising that information behaviour involves the creation, acquisition, use, and sharing of information (Karunakaran et al. 2010).

In seeking to bring together findings from previous CIB research, Karunakaran et al. (2010) have proposed a model of collaborative information behaviour situated within the organisation. The model incorporates three phases, with some activities limited to a particular phase whilst others cut across all three (see Figure 2-5). Phase 1 begins with groups of people identifying a problem and creating a shared representation which can include any form of external portrayal that can be shared with others. This sharing refines the problem identification, which in turn refines its representation before arriving at a shared understanding. This shared understanding is refined further by an iterative process, moving between the shared representation of the problem and the shared understanding in context. Triggers provide critical points of transition between individual and collaborative information behaviour. Whilst triggers may be caused by gaps between the context and the desired state or between a lack of particular information, Karunakaran et al. (2010) argue that CIB has four main triggers:

- Complexity of information need

- Fragmented information resources
- Lack of domain expertise
- Lack of immediately accessible information

Phase 2 occurs when the problem meets one of these triggers, giving rise to purposeful collaborative information seeking (CIS) by two or more people. In this context, CIS includes retrieving and sharing. These micro-activities consisting of at least two people involve interaction with the activity system at different levels – cognitive, affective and through user-system interactions. Finally, in phase 3 the information use includes all the communicative acts (physical and mental) used to integrate the information, brought together into the group's existing knowledge base to achieve a common understanding. Information need is met when the use satisfies the problem in context. Within the Karunakaran et al. (2010) model, there are three activities present in all phases:

- Continuous information sharing and evaluation
- Collaborative grounding which constructs a shared understanding based on an assimilation of all the available information
- Collaborative sense-making of disorganised information

Whilst the authors agree that matching representation with understanding cannot be assumed, the model does not deal with how disagreements are resolved or where agreement takes many years and the situational backdrop to the information problem changes (Karunakaran et al. 2010). The model also implies that equal weight is given to each individual's assessment of the information, which is not necessarily the case, and that dialogue is based on the public space, devoid of politics. In the case of organisations based upon legitimate and other forms of power, this egalitarianism is unlikely to exist. In these instances, the organisation may have a formally agreed view, for instance when a council committee agrees a resolution but this is not necessarily agreed by the officer cohort. Whilst these exigencies may be inevitable, they can cause ripples that lead to barriers to information sharing, retrieval and use. Micro-political, activity such as the withholding of information, can also prevent a shared understanding, perhaps leading to a greater reliance on intuition where the benefits of shared knowledge may be seen as unimportant.

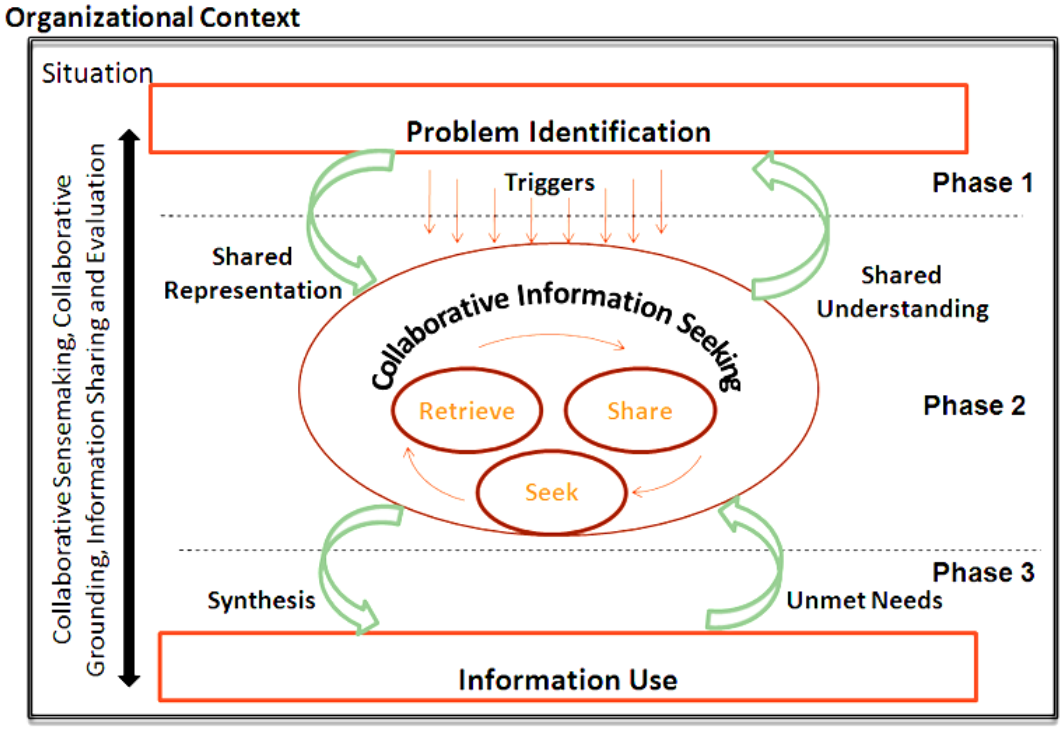


Figure 2-5: A Model of Collaborative Information Behaviour (Karunakaran et al. 2010)

2.2.6 Professional Groups

Project teams tend to include professional groups, but there has been limited research on the information behaviour of professional officers, let alone those within local government. For the purpose of this research, the term professional is adapted from Leckie et al. (1996), who have argued that exploring diverse work-related contexts will enable information science to ground its theories and information processes. The definition includes service orientated professionals, with extensive post college education working within standards set by a professional body and/or adhering to nationally recognised codes of ethics (Leckie et al. 1996). However, whilst it has been argued that professionals share common ethical and normative frameworks with any power differentials dependent on expertise rather than hierarchy (Sloane 2008), this ignores the situational factors pertaining to organisational bureaucracies.

Outside of academia, the health care sector has been the most researched area of information behaviour amongst professions. Niedźwiedzka (2003) studied the information behaviour of health service managers in Poland, many of whom were medical professionals. She proposed a model updating

Wilson's (1999) revised information behaviour model. The changes make the model applicable to a wider range of users, recognising that managers may ask others to seek information on their behalf. These intermediaries are crucial as they also process and validate the information, albeit using activating mechanism similar to those proposed by Wilson (1999). Isah's (2008) research found that for physicians learning and work practice is entwined. Physicians construct their information, which is embedded in the context of their learning in work practice, which is mediated through tools and artefacts (op cit.). The study found that meaning is created through negotiation, which is dynamic. Like several models, it was found that understanding and the interpretation of events is done collectively (Karunakaran et al. 2010). Unlike most models, however, it recognises the role of politics, with emerging contradictions stabilised through the intervention of symmetrical and asymmetrical power relationships (Isah 2008).

Jette's (2003) research into health care physical therapists' decision-making and information use discovered that initial judgements were shaped by sharing information with health teams. However, final validation and use requires consideration of the situational constraints placed on the optimum solution by the organisation. Research by Leckie et al. (1996) built on earlier studies to look at the information behaviour of a range of professionals – including doctors, dentists, nurses, engineers and lawyers. For nurses, their information need is patient, administrative and general nursing related, depending on the nature of the information problem. Verbal and written information is equally regarded, but seeking information from trusted colleagues is crucial, followed by other ward based information and journals. Doctors also made extensive use of colleagues and written material, but the balance depended on the medical fields practiced. Interestingly, it found that the need for immediate access partially explains reliance on colleagues, but reliance on colleagues decreases with age. Dentists preferred convenience most, followed by reliability, comprehensiveness, timeliness and cost. Lawyers need access to a wide variety of information and their information seeking strategies depend on the task, such as persuasion (tribunal) or drafting (preparation). Like Niedźwiedzka (2003). Jette's (2003) research suggests that in-house information seeking means some tasks can be delegated or shared. But this imposed query was found to be dependent on the resources available to the organisation.

Whilst there is some overlap with scientists, engineers generally want information that helps to solve technical problems. Leckie et al. (1996) also cite Rosenbloom and Wolek's (1967) earlier research, which also showed that engineers rely more on colleagues and internal sources. This is supported by Dzokoto's (2013) finding, which also identifies a preference for information channels that required least effort, in part to avoid information overload, even if this compromises quality. Conversely, scientists rely more on published material and other sources outside their institution (Leckie et al. 1996). This is perhaps due to the immediacy and deeply situational nature of the engineer's problem task, whilst researchers are likely to have a national or international focus, where immediacy is less critical.

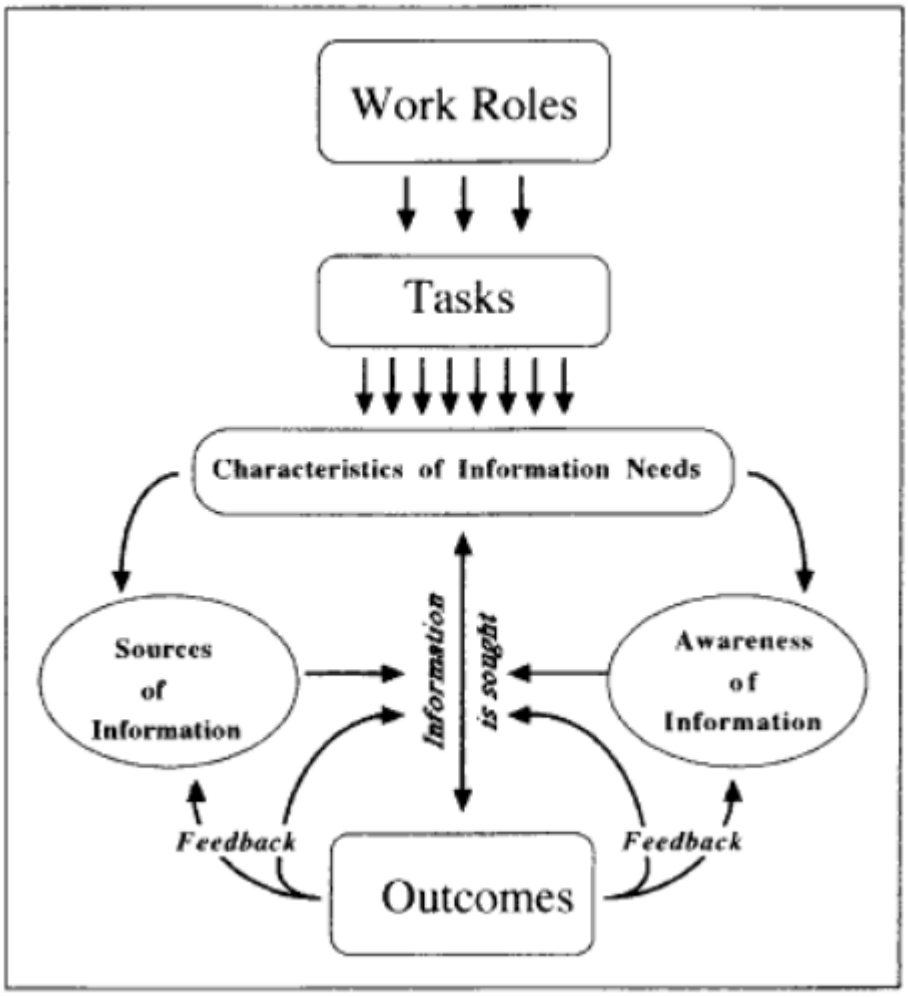


Figure 2-6: A model of information seeking of professionals (Leckie et al. 1996)

The model advanced by Leckie et al. (1996) incorporates findings from previous research and is based on the assumption that information seeking is

related to work role and the tasks that arise from it (see Figure 2-6). These roles and tasks result in information needs which are modified by prior knowledge, the availability of information sources, domain knowledge and the nature of the information seeker and his or her context (Kerins et al. 2004). It is an iterative model, with the experience of each information use episode going on to inform knowledge schema that underpins subsequent information needs.

Research by du Preez and Meyer (2016) explored the social networks and work practices of consulting engineers who work in diverse environments, often in project teams. The research developed a model to address the lack of attention to both individual and collaborative information behaviour (see Figure 2-7). The model has four basic elements – the context of the engineering environment, along with the personal context, information needs and information activities of the engineers. The context in which engineers operate helps to determine a response in relation to a defined problem. This domain also interacts with other engineering industry related contexts.

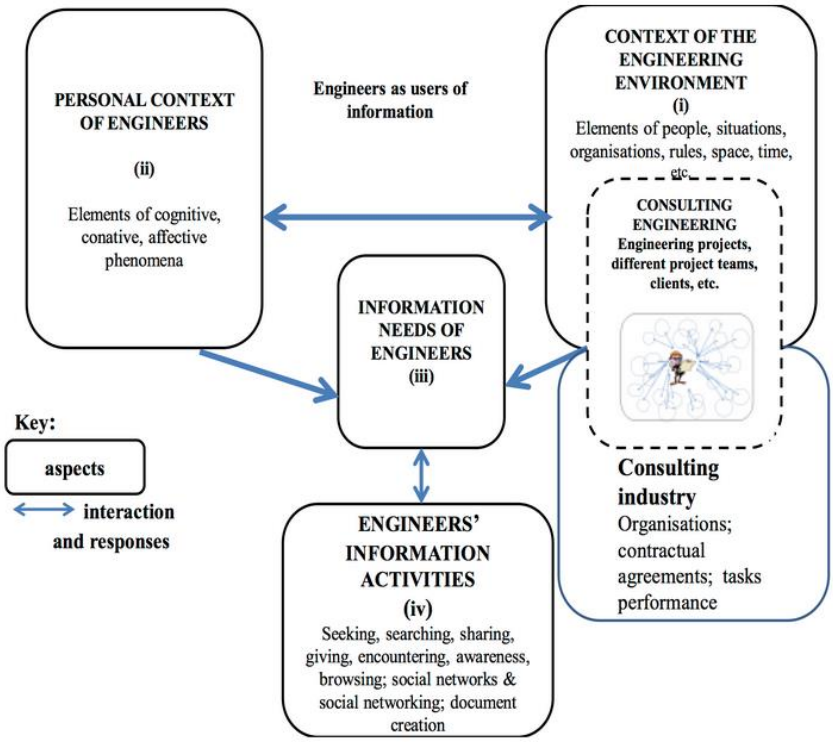


Figure 2-7: Collaborative Information Behaviour of Consulting Engineers (du Preez and Meyer 2016)

The personal dimension incorporates the conative, self-efficacy, learning

styles and affective phenomena. The interaction between the personal and environment leads to information needs. This need provides a response, which is manifest in the engineer's information activities, such as seeking, sharing and browsing. The findings of the research emphasise the importance of self-efficacy and learning styles as coping strategies when involved in decision making, perhaps reflecting the importance of the information need for each new task (du Preez and Meyer 2016).

du Preez and Meyer (2016) identify trust as an important factor in maintaining and promoting information exchange through social networks. In particular, they found that trust affects decision making and their reliance on the domain knowledge of others. As an extension of this relationship-based validation, engineers also had a preference for working with those with whom they have had previous experience, in order to avoid errors. This knowledge generation arising from prior experience with certain individuals and their working environment enhances absorptive capacity, making future frames of reference for information needs more effective (Senaratne and Malewana 2011). For this to extend to benefit the team, however, requires thinking beyond the capacity of individuals, creative approaches to problems and ensuring that learning is shared amongst teams (Senge 2006).

2.2.7 Social Models

The social approach takes the group as the primary unit of analysis (Hartel 2014). Emerging from communications theory, this research has studied marginalised groups, including retired women, high school janitors and women prisoners (Chatman 1991; Chatman 1996; Chatman 1999), Maori school students (Lilley 2008), the homeless (Fransen-Taylor and Narayan 2016) and indigenous Australians (Du and Haines 2017). For the social approach, information behaviour cannot be understood from the perspective of the individual or without reference to the context (Fidel et al. 2004). The immersion of the person within a particular social context through which information behaviour takes place is essential for understanding information behaviour. The most prominent of the social information practice researchers was Elfreda Chatman, whose pioneering and creative work seeking a deeper understand of information behaviour continues (Hartel 2014).

2.2.8 Chatman's Small Worlds

In a contemporary sense, information inequality has been a significant concern since the 1960's as the product information economy began to make way for the information based economy (Yu 2006). Elfreda Chatman's 'small worlds' theory development arose from her observations that social barriers to information access were not being fully recognised within the literature (Chatman 1999). Chatman established three major theories on information behaviour and information poverty within small worlds, namely the theory of information poverty, the theory of normative behaviour and the theory of life in the round (Chatman 2000; Thompson 2009). Unlike other works on information poverty (Childers and Post 1975) which specifically highlighted economic barriers to information access, Chatman argued that socially determined norms and values were the main barriers to privileged information (Thompson 2009). Others have also linked access to information to factors that are social or political (Yu 2006), with some emphasising the social justice or ethical issues that arise from it (Britz 2004; Shen 2013).

Chatman argued that an individual's perception, within a framework of shared social norms, means that information may be available to the individual or group but that they perceive it as being of little or no assistance (Chatman 1999). Thus whilst outsiders may withhold information privileges, it is the insider's self-protective behaviours that lead to the repeated separation of the information poor from the information they need (Chatman 1996). Whilst this infers a certain degree of distrust of information from others as they cannot see the world from their perspective, Chatman posits that as social beings we invariably adopt social networks with those around us who share similar views (Thompson 2009).

Trust is also a central tenet of Chatman's small worlds theory. In small worlds members of the group have similar concerns and have shared meanings because of the customs and language they uniquely share (Dankasa 2016). The value of Chatman's approach to small worlds was to provide more substantive development and refinement of works by previous scholars. This is particularly relevant in the case of Schutz (1974), whose life-world was refined by Chatman and Wilson's (1983) notion of cognitive authority. Here, people construct knowledge based on personal experience and trusted others within a given sphere of influence in which they can speak

with authority (Savolainen 2009).

Cognitive authority has a number of implications for information behaviour and the trust we place in information sources. It is especially relevant when working outside of one's comfort zone. By coming into contact with information sources whose veracity cannot be verified through previous experience, other sources of validation have to be found. In dynamic contexts, such as project teams where new knowledge is being reconstructed and appraised by a variety of interested parties, finding this sense of what is right is more challenging and even where quality control mechanisms exist these also require a degree of familiarity before acceptance. Thus, trust in others and their sphere of influence is important, as are their own norms, values and information ontologies.

Members of a small world who live in the round will not go outside of their world to pursue information (Dankasa 2016). When movement into a new small world is forced, for example through imprisonment, new information is sought to facilitate movement from being an outsider to one whose life values correspond to those inside the new establishment (Chatman 1991; Chatman 1999).

Chatman cites Merton (1968), who identifies types of people and the networks they choose to inhabit. Cosmopolitan means having an orientation outside your own social world to the "Great Society", which has an emphasis on international and national interests. Crucially, it also means holding onto a belief that one is part of that wider world. There are also what Chatman describes as the "locals" or "insiders". Their focus is on the everyday reality of life, much of which relates to sustaining relationships and networks within their small world.

Another observation is that common ideas allow meaning to occur. Thus, meaning can occur as new members seek to understand the system in order to survive and adapt within it. Knowing what it means to be typecast by others is important to understanding how a person will fit with others. This typecasting is regarded as important because it transmits shared expectations about each other. In doing so, it provides important pointers to how we should seek information and provides the environment/conditionality for the exchanging of ideas. Citing Luckman's (1970) definition of a lifeworld which is defined by shared beliefs, acting in

accordance with expected norms and values, Chatman (1999) posits that these norms provide the horizons of the individual's worlds and, therefore, impose a certain social control by imposing boundaries which may affect a person's whole life. They also set out what is and is not important, indicating that this worldview can be changed, for example by the opinions of the majority or popular opinion, albeit this is not emphasised in Chatman's work.

2.2.9 Information Grounds

Fisher and colleagues developed the notion of information grounds to describe the temporary and informal congregation of people around a particular activity (Fisher and Naumer 2006). Like Chatman's work, information grounds were based on social constructionism, with Fisher influenced in particular by the conceptualisation by Tuominen and Savolainen (1997) and their contention that social reality is created through "conversational networks". Fisher (nee Pettigrew) discovered that people gathering around a water cooler or at a foot clinic, bike shop or beauty and tattoo parlours would lead to incidental, spontaneous and serendipitous information sharing that might not occur in other settings and times (Pettigrew 1999). Yet despite the informality of these settings, information exchanges exhibited certain norms and conventions.

Fisher's research built upon earlier notions of place as a phenomenon in research fields including anthropology, sociology and geography, and acknowledged the foundational work undertaken by Feld and Basso (1996), Lippard (1997) and Oldenburg (1999). Whilst Chatman's work also built on this increasing recognition of place by authors such as Shutz and Luckmann (1974), Fisher put the importance of place in the foreground.

Drawing on the findings from the study of the foot clinic, Fisher and Naumer (2006) described information grounds as having seven key concepts (see below and Figure 2-8), which are derived from the following propositions:

Proposition 1: Information grounds can occur anywhere, in any type of temporal setting, and are predicated on the presence of individuals.

Proposition 2: People gather at information grounds for a primary, instrumental purpose other than information sharing.

Proposition 3: Information grounds are attended by different social types, most, if not all of whom play expected and important, albeit different, roles in information flow.

Proposition 4: Social interaction is a primary activity at information grounds such that information flow is a by-product.

Proposition 5: People engage in formal and informal information sharing, and information flow occurs in many directions.

Proposition 6: People use information obtained at information grounds in alternative ways, and benefit along physical, social, affective, and cognitive dimensions.

Proposition 7: Many sub-contexts exist within an information ground and are based on people's perspectives and physical factors; together these sub-contexts form a grand context.

Information grounds are predicated on attendance by the same types of people. Whilst Fisher et al. (2004) found that information grounds can be nurtured by the providers of the services that operate from the same physical place, they cannot be created externally in a formal sense. This nurturing, however, can include support for norms and conventions, such as not reporting matters to outsiders such as the Immigration Service, in order to avoid discouraging future exchanges.

Whilst there primarily for instrumental purposes (e.g. foot care), a people's interaction within this temporal setting is always social in nature (Fisher et al. 2004). Information needs are not codified but emerge through casual social interaction, often through "small talk". Whilst most exchanges are direct, imposed queries also occur. Crucially, information grounds are rich in context with many overlapping sub-contexts in existence simultaneously. As such, the information ground only exists as long as its members are present.

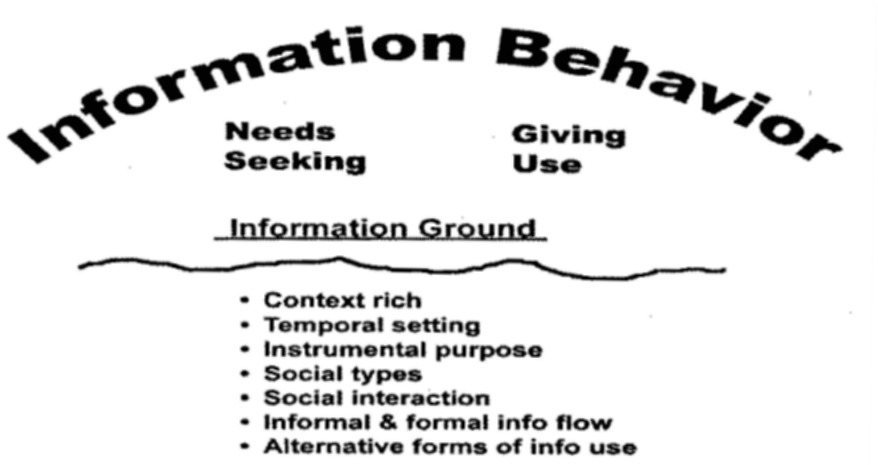


Figure 2-8: Information Grounds (Fisher and Naumer 2006)

2.2.10 Burnett's Information Worlds

Information worlds were developed as the discipline of information behaviours expanded from information seeking activities to taking on a wide range of social, affective and contextual issues that shape information use. The central tenet of information worlds is that several interconnected factors are necessary to understand their value and the construction of human meaning (Burnett 2015). These are:

1. The cognitive and affective domain of the individual,

2. The collective domain of the social and

3. The domain of signification and communication practices.

Burnett (2015) notes the contribution of Fisher and colleagues (Fisher et al. 2005) on information grounds and what he describes as Chatman's decisive turn away from the study of the individual as defining the locus of information behaviour (Burnett 2016). But he also recognises that, from the perspective of Belkin's "Anomalous States of Knowledge" (ASK) and Dervin's "Cognitive Gap", information need is, by necessity, defined in terms of the individual user (Burnett 2015). This recognises that the individual does not exist in isolation: he or she is an autonomous agent from which their need combines to become active information seeking and therefore a valid focus for information behaviour research.

For Burnett, the domain of the social compliments rather than competes with the focus on individual agency. In developing the social domain,

Burnett's information worlds seek to anchor the observed activity to a place that could provide guidance for the conceptualisation of information behaviour, thus avoiding what Dervin (2003, p.113) refers to as an "inexhaustible list of factors that are contextual".

Burnett has criticised what he calls Chatman's "constrained conceptualisation of the boundaries defining the limits of a world" (Burnett 2015, p.8). He notes that small worlds also exist within larger social groupings, influenced by their surroundings and the social worlds of outsiders who nevertheless interact with them, let alone the political forces that affect multiple worlds. Furthermore, Burnett has contended that small worlds are contiguous as well as embedded within other worlds. As a result, meaning is embedded not only within the individual but that meaning defines the structure and interactions between social worlds (Burnett 2015). Nevertheless, Burnett's theory of Information Worlds builds upon Chatman's work, together with that of Habermas' Lifeworld, to address the following the following issues:

- Chatman's focus on only the smallest of worlds limits the ability to analyse the interaction between social factors and information
- Information activities are socially situated within and shaped by social and cognitive factors and the information needs of the individual
- Information worlds overlap and interact with each other and the differences in perception might lead to conflict.

Information worlds introduce the notion of boundaries defined by information values, renamed from Chatman's worldview. These information values are agreed upon by those within the world but these values may differ. Whilst information world theory does not deny the importance of individuals or their preferences, it does privilege social over personal information values, as individuals act within a set of norms and values that are social in nature but are never fully free to act. However, it could be argued that the freedom to act merely creates a new world within which other like-minded individuals may enter until their actions preclude them.

Barnett posits that human interaction with information is not abstract and that it always has something encoded within it to make it more than information, in essence "information as a thing" or as a tangible physical manifestation of information (Buckland 1991). This domain of signification

is the abstract, non-localized, non-centralized space where meaning is generated and shared for the purpose of creating and regulating society.

Burnett argues that the individual, social and signification domains are inextricably linked. For Burnett, individuals occupy the social domain and interact through the mediation of signs (Burnett 2015). The social domain is the context containing people with unique characteristics who exchange information and engage using a variety of cultural artefacts and institutions; "signification and representational practices" play a critical role in helping to impart meaning (Burnett 2015, p.12). Attempts at understanding take place by the individual as part of a longitudinal and interactive social process. The argument is that whilst information can be packaged as a thing (Buckland 1991), information is always engaged and fluid, part of a series of complex processes which incorporate all three domains.

Information worlds provide a useful development of Chatman's work on small worlds, taking many of the principles beyond the domain of small groups into a wider societal setting. However, the notion of information worlds having values that are agreed upon by those within the world whilst recognising that these values may differ seems somewhat incongruous, given the intertwining proposed by Burnett. The use of "may" as a qualification in this context is somewhat anomalous because if information is the central structure of the world then by definition values will differ, it is only the extent to which this differentiation occurs which is moot. However, Burnett's opening up of intertwined information worlds enables a greater focus on the effect interacting worlds and activity systems have on each other. In particular, it shows that information needs, use and broader goals can be affected by deliberate or incidental contact and helps to develop the primarily singular world focus of Chatman's earlier work.

2.2.11 Motive

As Milner has contended, the construction of highly valid theory involving human behaviour for the purpose of improving practice needs to appraise motivation theories as a basis for activity (Milner 2003). Motivation is described variously as defined by goal-orientated behaviour (Locke and Latham 1990), a need serving to activate behaviour and direction (Kleinginna and Kleinginna 1981) or as the process that governs choices made by people among alternative forms of voluntary activity (Vroom 1964).

In that it forms the impetus, direction and momentum behind human activity (Steers and Porter 1987), the importance of motivation in learning and developing knowledge is well known (Hyman and Sheatley 1947; Savery 2006; Ross et al. 2016). As such, the concept of motive is integral to information behaviour, in particular information seeking behaviour, because if a person experiences an information need there must be an attendant motive to actually engage in such behaviour (Wilson 1997).

Many traditional models of motivation assume that the forces of motivation are static (Dornyei and Otto 1988). Project management is, however, a dynamic process with manifestations of activity, interaction and creation that demand distinctive attentions motivated by different forces (Pan 2006). Accordingly, project management involves a number of stages, each of which demands particular skills, knowledge and information mediated by social relationships and the exercising of political influence over stakeholders whose involvement in the project fluctuates with their interest and influence (Cornick and Mather 1999). In the context of team working and the need for collaboration to meet project objectives, the implication is that the behaviour of highly motivated people will make effective contributions to work and they will have clearly defined goals and plans of action designed to achieve them (Elliot 2006). However, conflicts can arise from structural, individual or personal disposition (Sanna et al. 2003), with mixed motive conflicts arising where people are faced with tensions between competition and co-operation (Messick and Brewer 1983).

2.2.12 Information Avoidance

Personal disposition and its effect on motivation can also lead to the avoidance of negative stimuli or activities which seek to resolve conflicting cognitive standpoints (Sorrentino and Short 1986; Martin et al. 1993). Whilst approach and avoidance temperaments are assumed to be relatively stable through socialization and experience, people can learn to affect their self-efficacy (Latham and Seijts 1999) and their disposition by the strategic use of goals (Elliot and Thrash 2002).

The assumption of early information scholars was that individuals seek information. As such most models of information behaviour have not given sufficient consideration to why information seeking does not take place in cases where people recognise their lack of it (Case et al. 2005). As Hyman

and Sheatley (1947) observed, people seek information that supports their social constructs in order to avoid information that conflicts with these beliefs. Subsequent research by Frey (1982) found that specific responses varied according to whether anything could be done to change the situation and, perhaps counter-intuitively, in those cases where nothing could be done people are more likely to deal with the dissonant information.

Whilst success in information avoidance needs avoidance of all links to the stimulus, approach situations can develop from just a single piece of information (Martin et al. 1993). In their research on the relationship between disposition and goals, Elliot and Thrash (2002) found that goals could enhance motivation and override avoidance predispositions. This could occur whilst providing the opportunity for people to overrule a predisposition for avoidance by developing performance-approach goals that emerged from an avoidance temperament. However, whilst socialisation, experience and learning may enable individuals to manage their temperamental proclivities by using goals in a strategic fashion, people with a shared approach and avoidance temperaments may also exhibit differential approach and avoidance patterns of activity as a function of differential goal adoption and pursuit (Elliot and Thrash 2002).

Most studies of information behaviour focus on the benefits of acquiring information and many, with the notable exception of Wilson (1999), do not consider that information seeking will not take place in scenarios where knowledge is lacking (Ellis 1989; Kuhlthau 1993). Where it is considered, the literature is fragmented (Savolainen 2007). Whilst the concept of avoiding information has a long history in the literature on communication and psychology (Case et al. 2005), avoidance is generally still under-theorised within the information behaviour literature (Choo 2017).

2.2.13 Information Overload

Savolainen has described information overload as “a subjective experience of the insufficiency of time needed to make effective use of information resources available in specific situations” (Savolainen 2007, p.2). In practice, information does not in itself lead to the effective management of projects, nor is all information useful (Cleland and Ireland 2002). The dictum that “more information is always better” was one of the 10 dubious assumptions challenged by Dervin (1976); typically the problem is interpreting and

contextualising what information there is (Haksever 1998; Case 2002). Schroder et al. (1967) found that an individual's ability to process complex information increased with environmental complexity – essentially the combination of uncertainty and the individual's reaction towards the information being processed, but only to a point.

The point at which the marginal utility of further information begins to diminish has also been identified as the point at which new information no longer forms part of the decision-making (Cook 1993) due to the task requirements exceeding human processing capacity (Meyer 1998), situational processing capacity (Galbraith 1974), time constraints (Schick et al. 1990) and anxiety (Haksever and Fisher 1996). In their review of information overload, Eppler and Mengis (2004) have identified personal factors, information characteristics, task characteristics, organisations and information technology as the primary variables affecting information overload, citing the skills and ability of the project managers as the most relevant when determining the information overload (see Figure 2-9). With a growing 'store everything culture' within organisations due to ICT infrastructures and business requirements (e.g. for legal requirements or risk aversion), too much low-value information is retained, undermining decision making whilst the valuable knowledge of departing staff is not eagerly captured (Tang et al. 2010).

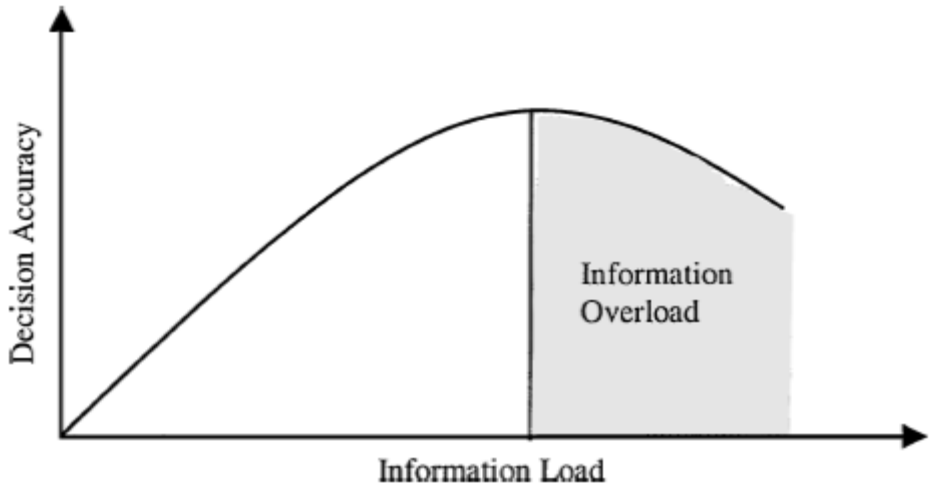


Figure 2-9: Information Overload (Eppler and Mengis 2004)

In his analysis of the attitudes of 140 construction project managers to the concept of information overload, Haksever (1998) found that project

manager attributes, such as organisational type, experience and professions, were found to reflect the information overload pattern. However, unlike Eppler and Mengis (2004), he believed the attributes of the information itself were not found to be significant (Haksever 1998).

2.2.14 Strategic Information Behaviour

Complex problem-solving requires the sharing and recombination of diverse knowledge bases. Both managers and the developers of management processes and tools have sought to promote the integration of these knowledge sets within projects (Young-Hyman 2016). At the task level, this goal is sought through the introduction of diverse projects teams and the assumed co-construction of reports and other codified and non-codified information. At a strategic level, cross organisational co-ordination is achieved through senior leadership teams who represent a range of services and who have formal authority in the form of delegated powers which are shared widely as councils have moved from a committee to an executive structure following the Local Government Act 2000.

The literature tends to assume that collaborative information behaviour within teams is uncontested and is uniformly influenced by members of the group. Despite this, information is often used to inform decisions, the benefits and construction of which do not rely on consensus or collaboration. Despite the moves toward decentralisation, knowledge remains one of the primary bases of power; as such it remains susceptible to the vagaries of personal preference, bias and the protection of existing power bases. Within the field of communications literature, SIB has been referenced in the context of communication and information systems as “carriers of power”, reflecting the ability of information control as a power resource for gatekeepers in between different organisational units (Pettigrew 1973, p. 187). With reference to information technology, SIB is regarded as enabling a greater reach of information across the organisation, thereby extending the ability to act strategically (Weerapura 2011).

Within the sociological literature, Ryan has argued that “notification norms”, the social rules that affect the transfering of information, dictate with whom, when and how information is shared, based on content and social relationships (Ryan 2006). These abilities are a learnt competence enabling extra meta-information from notifications, as well as manipulating social

structures by recombining this information into their exchanges with others. In this context, SIB and imperfect or asymmetrical information represent polar opposites, both capable of undermining a secure ontologically validated occupation of our social position. This theme of using information to decieve or deflect or ingratiate through the use of strategic information behaviour is also identified in Plack's (2003) exploration of how we judge the veractity of the information we receive. Citing Zmud (1990), Fulk and Steinfield (1992) also identify a numbers of ways in which strategic information behaviour can be called up to gain advantage from the control of information through through filtering, re-routing and modifying information systems.

Whilst there has been some acknowledgement of the role of power as a conceptual lens (Heizmann and Olsson 2015) and in information systems (Chang 2010), there is no agreed definition of strategic information behaviour within the information behaviour literature. Weerapura (2011) uses the term in her article on the strategic use of information to boost academic performance. Whilst she only uses the term once and does not specifically define it, the central theme of her research was to investigate "how an individual influences an information use process by engaging in strategies to achieve the user's perceived objectives" (Weerapura 2011, p.2). The Merriam-Webster Dictionary describes strategy as "a careful plan or method". This suggests a logical, step by step approach to a carefully induced process of achieving one's own goals. What it fails to consider is that the achievement of those goals may depend on others whilst neglecting to deal with work situations where there are completing priorities, power asymmetries and micro-political behaviour to consider.

Ducheneaut (2002) does not specifically define SIB but implies that it allows the actor sending the information to magnify their indirect interaction with others via artefacts, rather than through direct means. Ducheneaut's research looked at the introduction of email on an organisation's structure and power, which supported the view that ICT, organisational context and actors interact to shape the use of ICT and its effect on organisational behaviour. It is implied that mass communication methods such as email should increase the incidence of SIB. Interestingly Ducheneaut notes, as a consequence, that

> "…the power that some individuals used to hold because of their position

> in information networks could be greatly diminished. This leads to the following hypothesis: H1: When e-mail is adopted by an organization, power linked to an individual's initial position in information networks is reduced" (Ducheneaut 2002, p.161).

This more expansive and situational role for SIB does speak to the power relationships evident within organisations (Goncalves 2013). This is important because within organisations power is important, as people have a tendency towards seeking power to influence events. This can result in political behaviours when power comes into conflict with the division of labour (Nicholson 1997).

2.2.15 Model Choice

The literature review has considered a number of psychological and social models of information behaviour. The models were chosen for two reasons: firstly, their role as foundational texts in the subject of information behaviour. Secondly, despite the breadth of approaches taken they help to illustrate the lack of attention to information behaviour models for early stage projects or within local government. The narrative surrounding each model has set it within the context of the literature, both challenging and supportive. However, not all agree and therefore it is important to set out which models or principles have been privileged in the thesis. These are set out below:

- Information need. The stimulus for the action is tacit, personal and ineffable and can only be hinted at through the actions of the knower. The need for information is insufficient in itself to lead to action as there must be an attendant motive to compel the behaviours (Wilson 1999).
- Motivations. The self-efficacy route to empowerment is rooted in the psychological perspective (Kariuki and Murimi 2015) and takes into account a number of factors leading to increased intrinsic motivation (Wilson 2007). Team efficacy depends on the extent of team interdependence (Gully et al. 2001) and leadership empowerment (Srivastava et al. 2006). Finally, Sense-making is a fundamental aspect of all human activity as people consciously or unconsciously seek to construct meaning by bridging gaps between knowledge and perception (Dervin 1999).
- Cognitive. Kuhlthau's work, based on Kelly's Personal Construct Theory

(Kelly 1991), recognises the influence of feelings on the process of meaning-construction during information seeking (Kuhlthau 2004).Trust and similar interests and concerns help to share meaning because of the customs and language some professional groups uniquely share (Dankasa 2016).

- Collaboration. The person in context, which affects the need for information, together with the environment and inter-personal interactions affecting the intervening variables, suggest that information behaviour is not a solitary activity (Wilson 1999). Collaborative working is partly triggered by the complexity of information need, fragmented information resources, a lack of domain expertise and a lack of immediately accessible information (Karunakaran et al. 2013). However, in organisations based upon legitimate and other forms of power this egalitarianism is unlikely to exist and SIB can also be enacted. The use of SIB may also result in a greater reliance on intuition where shared knowledge is less important or where the use of legitimate or coercive power undermines information exchange.
- Situatedness. The intervening variables, between stimulus and response, are inextricably linked to situational factors. Wilson's "intervening variables" are more properly conceptualised as part of context itself (Niedźwiedzka 2003) and as such the activating mechanisms are not purely individual in nature but may also arise from the complex and interdependent needs of others, including asking others to seek information, as illustrated by Gross' imposed query model (Gross 2001). Also, the places where information exchange takes place are rich in context with many overlapping sub-contexts in existence simultaneously (Fisher and Naumer 2006).
- Barriers. Socially determined norms and values are the main barriers to privileged information (Chatman 1999; Thompson 2009; Burnett 2015). Others factors are social or political (Yu 2006).
- Organisations. Project teams are tasked with delivering distinctive projects with decision making that is integral to their structure and the priorities of the parent organisation, requiring complex feedback and feedforward routines (Love et al. 2002). Initial judgements on decision making and information are shaped by sharing information with the team. However, final validation and use requires consideration of the situational constraints placed on the optimum solution by the organisation (Jette et al. 2003).

- Power. Politics plays a central role in information behaviour with emerging contradictions stabilised through the intervention of symmetrical and asymmetrical power relationships (Isah 2008; Karunakaran et al. 2010).
- Methodology. Wilson's model is important as it highlights the role and need for qualitative factors to be considered in order for information behaviour to be modelled (Wilson 1999; Karunakaran et al. 2013).

2.3 Projects and Project Teams

So far, this chapter has looked at the paradigm characterisation of information behaviour and projects as an individual and as a social concern. In doing so, the review has sought to identify what is understood to be the theoretical basis of information behaviour generally, whilst highlighting its conjectural and practical applications for construction project teams. This section uses the literature to illuminate the situational and contextual factors particular to local government construction projects. Whilst not an information activity in their own right, the situation and context provide the basis for activity which can be observed as information behaviour (Leckie et al. 1996; du Preez and Meyer 2016).

2.3.1 The Emergence of Projects

The modern antecedents of project management processes are rooted in Weber's theory of bureaucracy and Taylor, Gilbreth and Gantt's scientific management writings (Morris and Hough 1987; Packendorff 1995). Since the 1960s, the role of projects as an efficient means of organising complex change-making activity has been increasingly recognised by industry (Munns and Bjeirmi 1996). This need for change and the perceived benefits of the project management form have led to projects becoming both pervasive and entrenched features of western organisational life (Pellegrinelli 2010). However, as the command and control meme of Taylor's scientific management has begun to wane, theories of the social sciences, organisation theory and psychology have grown in influence within project management practice and research (Söderlund 2004).

This is because many of the key principles underlying this classical project management (CPM) approach create an environment that is at best overly optimistic and the project systems designed to control risks and

uncertainties have provided only limited relief from a world where people control their actions within a wider context that defines the uncontrollable variables in our midst (Weaver 2007). Uncontrollable, in this sense, can include behavioural and strategic matters (Grundy 2000).

The principle reasons for this are threefold. Firstly, despite the spreading of project principles into organisations, project management as a discipline has no theoretical basis (Winter et al. 2006). Although Packendorff (1995) has argued that project management's multidisciplinary tradition makes it too general to be a specific theory, this lack of a theory of project management, its lack of theoretical concepts (Shenhar and Dvir 1996) and its focus on its empirical rather than a theoretical knowledge base have hampered research into the field of project management (Turner 2005).

Secondly, the growth in the application of project methods within organisations has paralleled the search for critical success factors within research and in practice. The inability of research to agree on the success factors, which has held back the development of theory, has been blamed on the dichotomy between the uniqueness of individual projects and the need for a generic form under which notions of 'projectness' exist (Söderlund 2004). After Thompson (1967), Söderlund (2004) has argued that the engineering and social science traditions are incompatible, "as one avoids uncertainty to achieve determinateness, while the other assumes uncertainty and indeterminateness" (p. 186). This tension between what can be regarded as the positivistic and interpretivists' views of project management demands a third perspective from which the true nature of projects can be investigated and reconciled.

Thirdly, notwithstanding the attempts to reimagine the subject, much of project management theory, formal methodology and practice is embedded within rational theories of power, providing a universal and deterministic model which emphasises planning and control (Winter et al. 2006). This assumes that the organisation has determined a rational set of objectives that members of the project team will seek to undertake. Therefore, from a rational perspective power is only used when someone seeks to achieve an objective that is not in line with the organisation's, thus by definition making that activity irrational (Jasperson et al. 2002). The recognition of power structures within project management is sporadic (Walker and Newcombe 2000), as 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).

Yet this transactional relationship is not a linear one as political processes are a necessary part of the project development process within local government. Whilst a range of project management frameworks exist that provide guidance on the information needed to take a project from conception to completion, each project (and its context) is unique. As such, the information needed to make informed decisions on each project must be sought, analysed and applied in relation to the nature of each project and its situation and context. While information in support of rational decisions may be sought, this linear relationship cannot be assumed, as anticipated by project literature. As Weiss and Bucuvalas (1980) cited in Pawson (2002, p.228) put it:

> “Information geared to ‘decision points’… may be relevant in a surprisingly limited number of instances. When most people most of the time operate from a knowledge base that they have acquired informally and haphazardly…”

Yet this plan-oriented rational action is a deeply rooted principle for professional work and management in most Western cultures (Böhle et al. 2016). As a result, a number of authors have sought to examine this divergence between the project practice and theory due to the weak theoretical underpinning of the discipline (Shenhar and Dvir 1996; Söderlund 2004; Cicmil et al. 2006; Morris 2010). This re-evaluation of projects has focussed on developing a greater understanding of project management as practiced and creating new possibilities for researching and theorising about projects (Cicmil and Hodgson 2006). Whilst some of this new thinking emerges from a systems perspective (Morris 2011), the majority of the new literature has approached project management from a social perspective, focussing on dealing with uncertainty within the context of social development (Winter et al. 2006; Böhle et al. 2016). Both approaches take a broader, more holistic view of projects as temporary structures imbedded within the permanent organisation and its wider context (Svejvig and Andersen 2015).

Included in this approach is the Re-thinking Project Management (RPM) network, whose aim was to link theory and practice through organised networks of academics and practitioners (Winter and Smith 2006). RPM embeds some CPM, rather than discarding it entirely (Svejvig 2015). Yet the central claim of the research and networking that followed was that a better understanding of projects, in particular the complex social processes involved at various levels of project activity, was needed to inform and enhance theory development and practical action (Cicmil et al. 2006). The RPM concluded with a call for the future directions of project management research to move from the CPM view of projects as instrumental processes to projects as social processes. Specifically, it called for;

> "concepts and images which focus on social interaction among people, illuminating: the flux of events and human action, and the framing of projects (and the profession) within an array of social agenda, practices, stakeholder relations, politics and power" (Winter and Smith 2006, p. 5).

This more pragmatic approach to research of the actuality of projects sought to generate knowledge and theory with the following qualities (Cicmil et al. 2006, p.676):

- the understanding of the actors' moral and ethical motives (practical reason) and their sense-making processes (enactment) and how their actions unfold over time and in connection with other, multiple events;
- the experience of emotions and feelings that drive action in complex environments;
- closer insight into intentions, political agendas and personal drives of individual actors and;
- the identification of tensions, power asymmetries and patterns of communicative relating among individuals and groups and how they are being negotiated in the context.

2.3.2 The Nature of Projects

Turner (1999) has described projects as "…an endeavour in which human, material and financial resources are organised in a novel way, to undertake a unique scope of work, of given specification, within constraints of cost and time, so as to achieve beneficial change defined by quantitative and qualitative objectives" (p. 3). Perhaps a little more dramatically, Lock (1996)

has described projects as a step into the unknown, fraught with risk and uncertainty. In response, Turner and Müller (2003) have emphasised the need to combat this uncertainty with temporary interventions that involve integration and collaborative working. This stresses the importance of a unity of purpose for the project team and others involved in the development of the project, which Turner and Müller (2003, p. 7) describe as:

> "...a temporary organization to which resources are assigned to undertake a unique, novel and transient endeavour that involves managing the inherent uncertainty and need for integration in order to deliver beneficial objectives of change."

The temporal nature of the project is also stressed by the Project Management Institute (PMI 2018) in its definition of a project as

> "temporary in that it has a defined beginning and end in time, and therefore defined scope and resources and a project is unique in that it is not a routine operation, but a specific set of operations designed to accomplish a singular goal".

In seeking a more value dependent definition, the UK's Department of Communities and Local Government defines "good" projects as being delivered on time and within the specified budget, and crucially, "delivering products that are the right quality... fit for purpose and meeting the customers' needs" (DCLG 2007). This reflects the iron triangle meme whilst extending the PMI's references to project or services by relating it to the judgement of the client or organisation as the primary stakeholder.

Figure 2-10 illustrates the regular balancing motif of a traditional project constraints and benefits. It has emerged from the iron triangle of cost, time and quality, the so-called hard paradigm, to include the softer difficult to quantify elements such as benefits, scope and risk (Pollack 2007). At its heart are the imperatives, things that cannot be traded with other aspects of the octagon to achieve progress. For example, safety on site which is everyone's responsibility, and which should trump all the other project elements. During the concept, design and implementation phases these considerations provide the basis for many of the central factors that define project success, at least in narrow CPM terms.

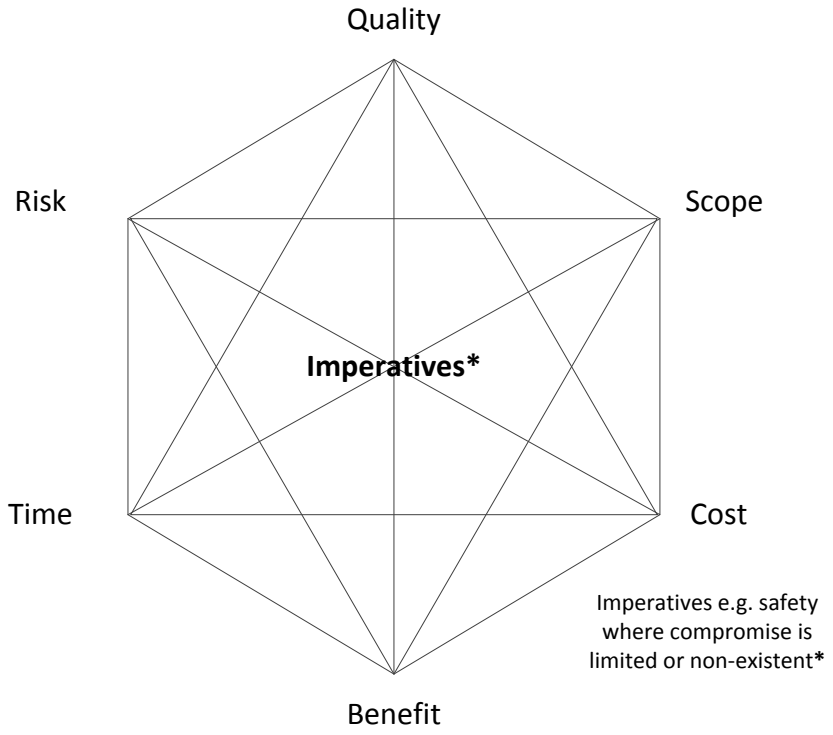


Figure 2-10: Project variables and imperatives

From these descriptions, a number of common themes emerge that help to define the nature of projects. First is the temporary nature of the venture, as distinct from the process-driven nature of much of organisational operations. In addition, the uniqueness of the artefact or service to be provided is also emphasised, pointing to the temporary, one-off nature of the task, together with the need to focus resources on a common purpose encompassing both the familiar and the original. However, the need to consider the wider context within which the actuality of the project takes place requires a better understanding of the organisation and the internal and external factors that shape and define what a successful or unsuccessful project is.

In addition to the factors highlighted in Figure 2-10, at the concept stage, other imperatives within a project may come to the fore, such as power asymmetries, history and politics. Whilst all projects include this risk and an acceptance that stakeholders can affect the value of the endeavour, local government is uniquely positioned to be affected by a multiplicity of considerations should a project fail, such as a) public access to most information is a statutory requirement, b) all decisions are made public, c) politicans affected by negative feedback are directly responsible for hiring,

and depensing with the services, of all senior staff and d) politicians are often unpopular – increasing the visibility of presumed wrongdoing even if the evidence is limited or non-existent.

2.3.3 Strategic Projects and the Front End

Morris' work on the Management of Projects (MoP) has sought to put the focus on the project as a method of realising wider business or organisational benefits, rather than simply undertaking project tasks (Fellows and Liu 2016; Morris 2016). Critically, MoP expands the role of the project manager and project team in two important aspects. Firstly, it places much greater emphasis on the project definition phase – what some call the front end or concept phase – during which strategic alignment is considered and the organisation of the project's structure and people are determined (Pinto and Winch 2016). Secondly, the critical interface of the MoP model is at the institutional level through the interaction between the project team and the larger organisational environment within which the project takes place. As Morris (2009, p. 60) puts it:

> "Effective management of projects is more than just execution-oriented project management. Projects are undertaken to create value and deliver benefits. Shaping the interaction between the sponsor's goals and the way the project (or programme) is to be developed, in the best way possible, is absolutely crucial — probably one of the most important aspects of managing a project".

This is done by creating a project approach that is capable of adapting the management of all projects whilst maintaining a clear conceptual view of the discipline at a strategic level (Morris 2010; Fellows and Liu 2016). This wider understanding of the nature of the project recognises that whilst project management is a generic discipline it is also high contextual (Morris 2010), situated within and dependent upon the structure, procurement (rules), behaviour (norms) and systems of the parent organisation. The MoP Framework developed by Morris seeks to illustrate the interconnectedness of the organisation in context, along with the cognitive, strategic and technical factors that help to define success at a particular moment in time (see Figure 2-11). This need for a better link between the actuality of projects and theory is also reflected within research into the learning processes of project managers, as it is only by situating their experiences within local contexts

that knowledge can be useful for managerial development and the creation of learning and skills development opportunities (Cicmil 2006). The need to unsettle the science of project management also behoves a broadening of the testable constructs upon which project management is based and a focus on the integrative nature of project management (Pinto and Winch 2016). This focus on success factors also begs the question who judges what is defined as success or failure. MoP is based on having a clear understanding of how success and failure are defined. This process includes a knowledge of the variables that shape success and failure, including socio-political, environmental and financial factors.

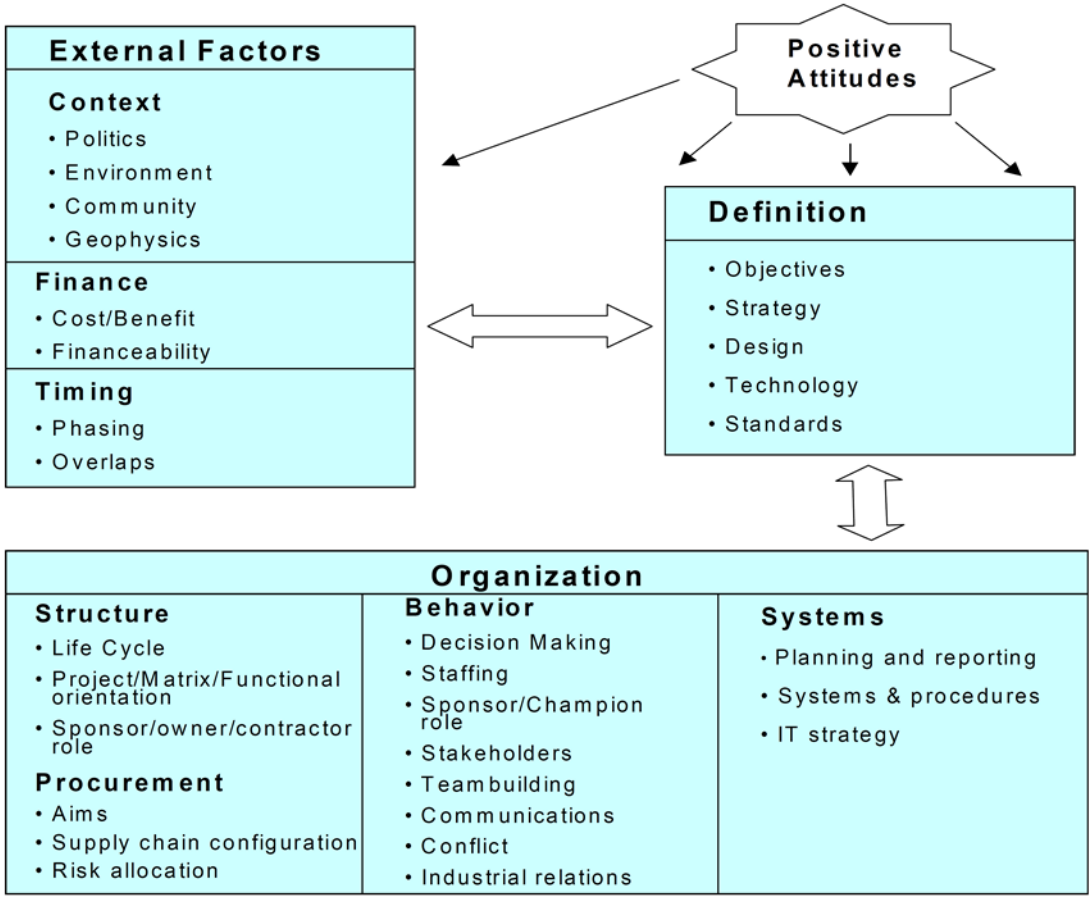


Figure 2-11: Management of Projects Framework (Morris 2010)

Morris' reference to positive attitude in his framework (see Figure 2-11) alludes to the notion that success may be measured differently depending on project type, with different people capable of assessing the success of the same project differently depending on their values and to the extent to which

they are affected by it (Samset and Volden 2016). So for example, whilst the project manager may see success as determined by the completion of a project within its resource constraints, end users of the facility may be more focussed on the long-term utility – whether success is regarded in absolute or relative terms. Samset and Volden (2016) have distinguished these tactical project performance measures from the longer term, strategic, performance measures. For Samset and Volden (2016) the front end phase, which broadly equates to the concept stage, is defined by strategic activities and is differentiated from the traditional project management stage (see Figure 2-12). The former is where the benefits of additional information to reduce uncertainty is at its greatest, despite the paradox that this is normally where least resources are spent. This is because of what they call the 'success paradox', where achievement is measured in terms of tactical, rather than strategic, performance (Samset and Volden 2016). This is reflected in the resource focus on the project, rather than on the longer term strategic benefits to the organisation.

Shenhar et al. (2001) argue that project success is a multi-faceted concept, complicated by the temporal dimension which can only be measured at the back end of the project life cycle. For public projects, this can take many years, even decades, to complete (Samset and Volden 2016). Concept stage projects are complex and far less easy to elucidate than the construction or design stages. There are substantial risks involved in trying to reconcile the range of needs and requirements at this stage and the stakeholders and personalities at play may wield substantial power (Morris 2011). Here project governance, the combination of processes, people, systems and norms, the organisation needs to have in place to improve the chances of success, are paramount. This is also where the main challenge for the organisation is to identify the optimal mix of instruments to achieve success (Samset and Volden 2016), including the need to secure an alignment between strategy and the project as a concept emerging from it (Williams and Samset 2010).

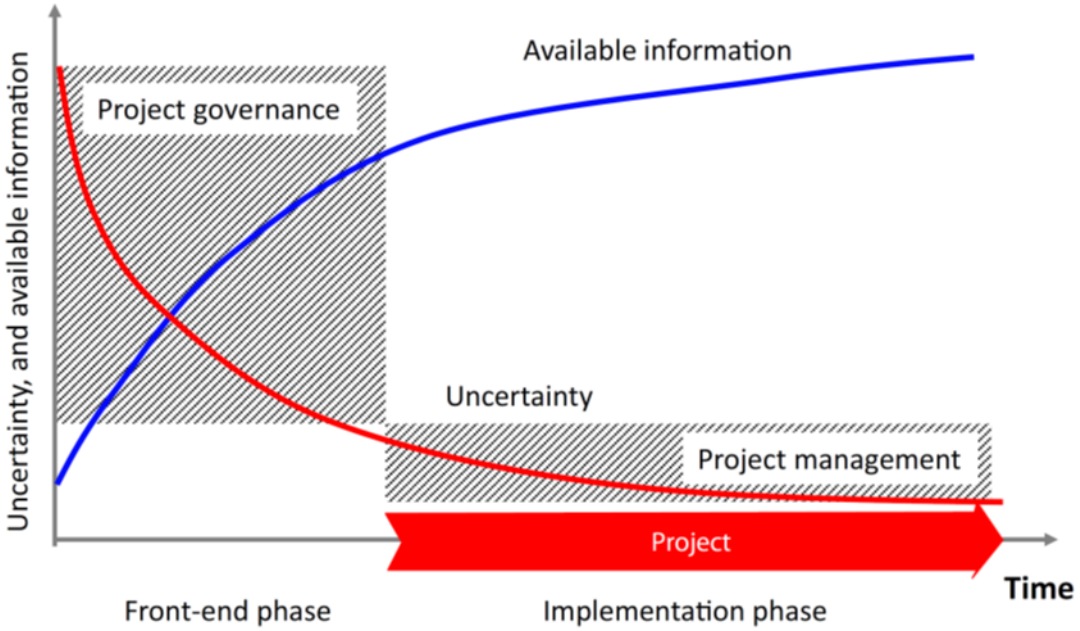


Figure 2-12: The uncertain front-end of the project lifecycle (Samset 2010)

This long-term focus on benefits realisation and the importance of the concept stage contrasts with the focus of much project management literature. Most of this literature is narrowly focussed on the project life cycle from design to implementation, thus ignoring the critical early stages (Samset and Volden 2016). As Morris (Morris 2011, p. 7) put it:

> "It is evident from an extensive amount of research that management of the front-end definitional stages of projects is of overwhelming importance to their ultimate outcome yet we have little empirical data to suggest how best management competencies here should be improved."

There is an increasing body of literature identifying the importance of the concept stage in the strategic management of projects, such as failures attributed to institutional factors and politics (Flyvbjerg et al. 2002; Flyvbjerg 2005; Flyvbjerg 2009; Flyvbjerg 2014), deviant normative behaviours (Grundy 2000; Pinto 2014), political bias and insufficient information (Williams and Samset 2010).

Research by Matinheikki et al. (2016) looking at a healthcare campus development identified a number of network management and attributes that describe how inter-organisational activity can be arranged to create increased value at the concept stage.

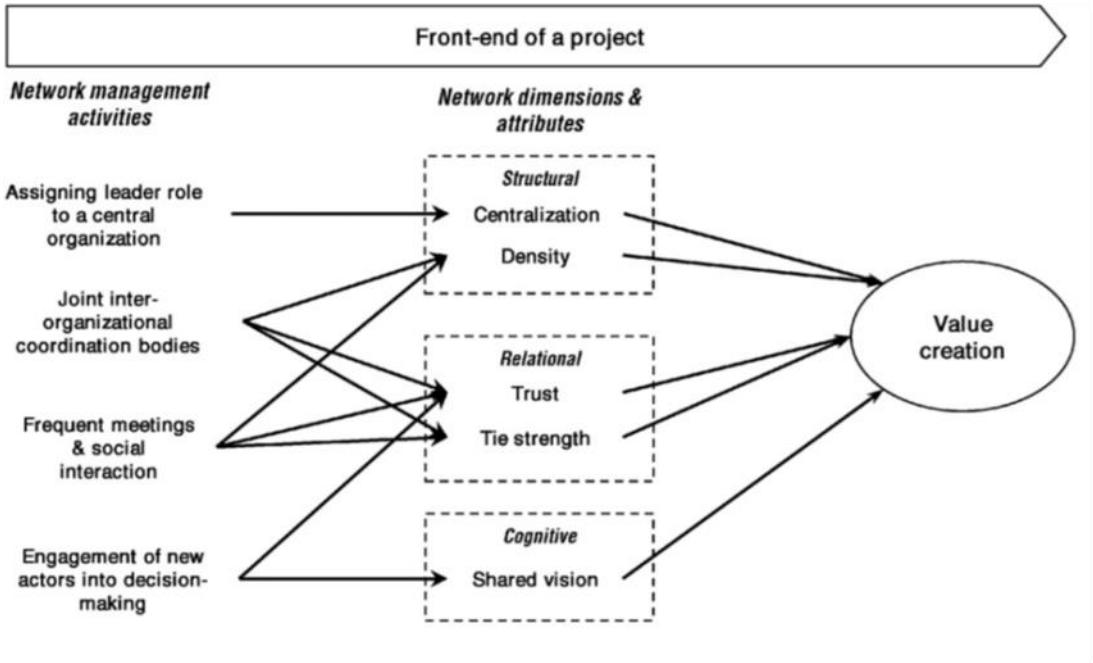


Figure 2-13: Inter-organisational networks and value creation (Matinheikki 2016)

The model identifies four management activities – assigning a leader, joint inter-organisational co-ordination, meetings and the engagement of new actors into decision-making (see Figure 2-13). These activities affect the networking attributes within the structural, rational and cognitive dimensions. The correct combination of these operations helps to enhance the possibility of value creation in the early stage of the project. Notwithstanding this, the volume of empirical research is still limited and exacerbated by the context-dependent nature of the variables affecting the phenomena under investigation (Matinheikki et al. 2016). Hence the call within the Re-thinking Project Management literature for more practice orientated research (Cicmil et al. 2006; Svejvig and Andersen 2015). Despite the focus on the strategic interconnectedness of projects early-stage definition generally, and specifically within local government, is not significantly dealt with by the literature.

2.3.4 Project Teams

Whilst there is no single accepted definition of a project team, there is at least some shared understanding in that project teams use limited resources to undertake a unique piece of work to achieve beneficial change (Turner 1999). Katzenbach and Smith (2003) have defined project teams as a small number of people with complementary skills who are committed to a

common purpose, performance goals and approach, for which they hold themselves mutually accountable. From the project definitions discussed earlier, it is clear that these descriptions are in essence complementary with those of the purpose and pursuit of project management, in that people with a common purpose bring with them the potential for change (Albrow 1992).

Projects are becoming more complex, involving diverse partners who need integrated systems that address issues of distance, culture and language (Lipnack and Stamps 1997; Rezvani et al. 2015). As such, the principle of shared understanding is a critical success factor in projects and an increasing appreciation of this has led to a greater focus on people (Couillard 1995; Jackson and Klobas 2008) and how they can be motivated to achieve performance improvements that transcend the team and provide direct benefits for the organisation (Dennis et al. 2000).

Whether the main goal of project teams is to meet the traditional iron triangle outcomes or more sophisticated measures which reflect organisational imperatives or team learning, the day-to-day decisions on information use are likely to be framed by at least one of these considerations. The temporal nature of the project team reinforces the sense that their activities are time-critical. Indeed, many aspects of project management – such as critical path theory and program evaluation and review technique (PERT) – are designed to achieve parallel activities and co-ordinated behaviours in multiple workplace settings, requiring a common language and understanding of context (Hansen 1995) facilitated by information flows and interpreted through the agency of personal (implicit) knowledge. This need to coordinate parallel and yet disjointed task information leads to tensions within information management systems, with time pressure being one of the most quoted risk measures identified by project risk analysis (Gallstedt 2003).

Nordqvist et al. (2004) have argued that project teams respond to these pressures by segmenting projects into achievable yet related work packages, linked by time to the overall project plan. These deadlines motivate the team to start the task as anxiety increases and the deadline approaches, although this anxiety can be moderated by group support for team goals and collective competence, irrespective of task complexity (Nordqvist et al. 2004). Whilst care has to be taken in transposing these findings from a Swedish project practice in private companies to the public sector in the UK, it does lend

support to the findings of other studies into group behaviour, which point to teams being greater than the sum of their parts (Driskell and Salas 1992). Also, whilst project theory has tended to focus on the project, the project manager and the project team, too little regard is given to the role of the project sponsors (Hall and Holt 2002) and the political context (Pinto 2000).

In a far-reaching review of what defined teams, Higgs (1999) identified seven elements cited at least once by 52 authors. These elements were: common purpose, interdependence, clarity of roles and contribution, satisfaction from mutual working, mutual and individual accountability, realisation of synergies and empowerment. However, project partnership working brings its own complexities and ambiguities that can generate confusion and weak accountability (Horwood 2006). These tensions between partners are at their most intense within the project team.

This need for collaborative working and the usefulness of teams has been evident as an important social phenomenon since the Hawthorne Studies (Sundstrom et al. 1990) and McGregor's Theory X and Y (Pugh 1978). For construction organisations, their day-to-day business cannot be undertaken without the creation of a project team (Cornick and Mather 1999). However, the process of team building is increasingly complex as traditional hierarchies decline in favour of flatter structures as cross-functional teams have evolved (Cleland and Ireland 2002).

Research by Baiden et al. (2006) which looked at the extent of team integration within exemplar construction projects, revealed that project teams were generally thought to be flexible – meaning that resources could be allocated and re-assigned according to the phase of development (Anumba and Evbuomwan 1999). However, the teams were unable to operate seamlessly due to the continued operation of their members within a particular organisational identity – with members feeling constrained by their own professional and organisational expectations. Most of the organisation structures were flat, which helped to improve professional recognition and discourse within the team (Anumba et al. 2005). The results showed that none of the teams were either fully fragmented or fully integrated and yet they were regarded as exemplars (Baiden et al. 2006). The main implication for research and practice is that the findings inadvertently begin to question how much is good enough and whether there are underlying factors that help to compensate for teams being less than perfect.

The implications of the research suggest that fully integrated teams are not essential for effective projects and there are still many challenges if the sector is to achieve the promised improvements suggested by integration.

In the past 20 years, project teams have gained in popularity as a form of organising and managing work. However, the concept of teams as inherently a good thing has been challenged. For example, Engestrom (2008) citing Senge (2006) reflects on the facades teams manufacture to maintain unity and punish detractors – whilst regarding teams as often acting more like a political entity rather than a value-creating actant. Engestrom goes on to postulate that when all the definitions of value are added up they often conflict or cancel each other out, noting,

> "...there is indeed fairly little critical and original theorizing on the collaborative work and associated cognitive and communicative processes within and between teams in real organisational contexts" (Engestrom 2008, p.4).

Engestrom argues that what theorising has taken place tends to de-contextualise the cognitive dynamics of small groups and mostly tends to be in the form of uncritical management texts (op. cit.).

2.3.5 Local Government Projects and Stakeholders

Within local government, the need for project teams may emerge from a wide variety of motivations: election pledges, the availability of external finance, statutory obligations or as part of wider regeneration programmes, for example. The initial phase is unlikely to involve drawings as concepts generated and amended within the socio-political milieu of council activity wrestle for pre-eminence with alternative resource-dependent choices. This stage is information-rich and requires diverse information needs (du Preez and Meyer 2016). The outline project and the strategy for achieving it will evolve through the bargaining power of stakeholders whose power will ebb and flow over time (Newcombe 2003). Should the project survive this initial gestation period, the nature of the stage is heavily influenced by the choice of procurement route. In a traditional approach the project sponsor may approach the project manager, who is then advised of the project requirements. As the project team, involving the technical specialists, users and others is formed, the project manager becomes the focus of the referent power within the team.

The technical specialists are likely to be other council staff but even within a traditional structure some form of “alliancing” may exist where these resources are procured externally or shared with other local authorities. The main role of the project team has traditionally been to produce the design specifications required to form the basis of costings, tender documentation, planning and other statutory functions. There is less focus on stakeholder management within the project team generally, despite the importance of stakeholders in defining organisational benefits and what constitutes success (De Schepper et al. 2014; Head and Alford 2015; Aaltonen et al. 2017). Within local government there are particular challenges such as the need to satisfy political aspirations within an adversarial climate where there is a duty to adhere to many rules, regulations and procedures that do not apply to the private sector (Amoatey and Hayibor 2017).

Stakeholders have been defined as those individuals and groups, inside or outside the project team, who could have a stake in or an expectation of the project outcome (Newcombe 2003). Whilst recognising the ability of the project to affect the stakeholder and vice versa, Karlsen defines stakeholders as those actors who sit outside the authority of the project manager (Karlsen 2002). The imprecision of the distinction perhaps reflects the relative influence of authority arising from the project versus the project team members’ parent organisation and line management.

Notwithstanding this difference, stakeholders generally defy control and occupy a critical role in determining the success or otherwise of the project. Despite this, there is only limited research on stakeholder management specific to projects (Stretton 2010). In discussing the methods used by stakeholders to influence projects, Mintzberg (1995) has referred to culture as a centripetal force of cooperation and the politics as a centrifugal force of conflict and competition. The referent power of sponsors and other 'political' stakeholders declines as the trajectory of the projects moves into the planning stages. With this, the expert power of the project team grows and the centripetal force of culture and its influence on cooperation on the project becomes more pronounced as subsequent stages are dominated by the interplay of culture and technology within the project team and its sphere of influence.

The control of information and resources provides stakeholders with power, whilst others gain power from their ability to determine whether a project is

deemed a success (Karlsen 2002). In his research on stakeholder management, Newcombe (2003) developed what he refers to as a Machiavellian approach to managing the influences of stakeholders, providing attention depending on the relative power, interest and predictability of stakeholder influence. In essence, Newcombe's suggestion reflects a Kantian approach involving equality of participation and the treatment of the project as an abstract entity by the project manager in order to ensure its survival (op cit.).

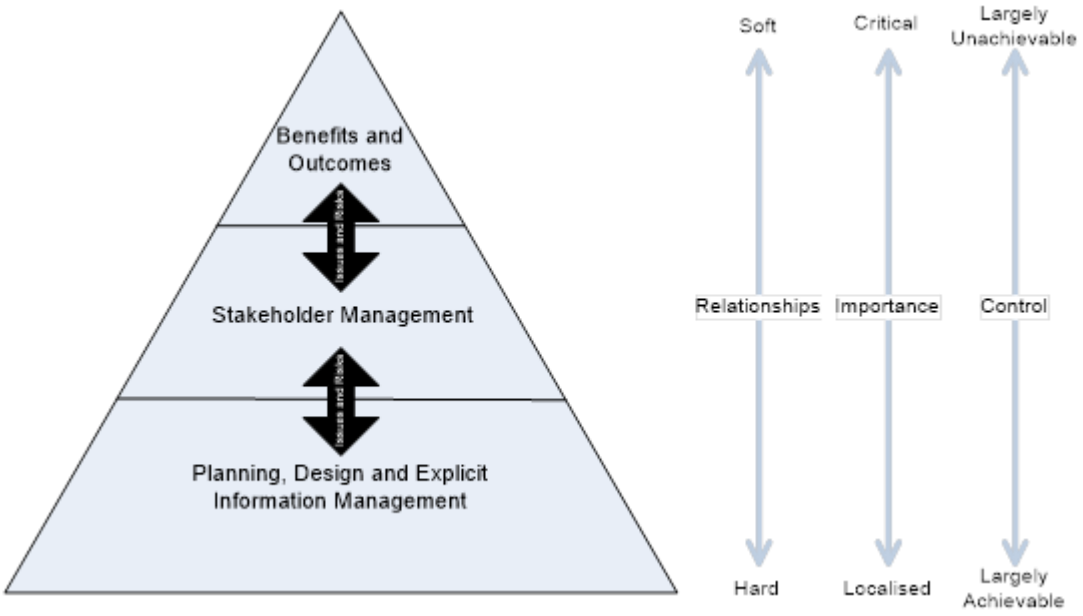


Figure 2-14: Stakeholder Relationships (adapted from Moorhouse 2007)

2.4 Conclusion

The extant literature has been used in this chapter to demonstrate two main gaps in the literature to which this research seeks to attend. In summary these are:

- Information behaviour research has focussed on the individual and has paid insufficient attention to the social construction of knowledge. Collaborative information behaviour research is in its infancy and there is no model of information behaviour for construction project teams. The research has tended to focus on human computer interaction whilst ignoring the wider social and organisational

contexts within which teams' work (Reddy and Jansen 2008).

- Construction project management literature and praxis, whilst claiming to recognise the complexity and attended and unattended dynamics of human activity, has not reflected this in the quantum of associated research or in its practice (Ernø-kjølhede 2000; Zwikael and Bar-Yoseph 2004; Morris 2010). Despite the plethora of reports into the UK construction industry, few attend to the early stages of the project where the ability to influence outcome and cost is greatest (Abdul-Kadir and Price 1995). Notwithstanding the ubiquity of project working and the influence of the state within the domain of construction projects, there is little research that attends to its understanding (Gomes et al. 2008).

Engestrom (2008) has observed that collaborative work has seen a lack of critical and original theorising on the communicative processes involving teams in real organisational settings. In practice, no single individual can acquire the variety of information required within the kind of dynamic group work environment typical of modern organisations (Sonnenwald and Pierce 2000). As Sarcevic (2009) has noted, in high reliability work situations most human work is performed by teams engaging in complex information behaviour to solve complex problems. Collaboration is, therefore, a critical success factor in any project when dealing with the individual relations inherent within partnerships (Vaaland 2004). González González-Ibáñez et al. (2013, p.1166) have defined collaborative information behaviour as:

> "…a social process in which two or more individuals intentionally and explicitly work together with the aim of cooperating to accomplish common goals, either synchronously or asynchronously, co-located or remotely located, using communication to interact with as well as to coordinate actions among group members".

Despite the importance of collaborative information behaviour (CIB) in many diverse work areas, the increasing influence of interpretivism within the social sciences and, in particular, its focus on the social construction of knowledge and meaning, information behaviour research has only recently begun to consider collaborative information behaviour (Reddy and Jansen 2008). Strategic information behaviour (SIB) remains largely unresearched within the information behaviour canon.

The literature review has illustrated the need to develop an understanding of human information behaviour in collaborative settings that reflect the project working schema that is typical of many organisations. Whilst studies into collaborative information behaviour have occurred, most of this research has focussed on human/computer interaction in isolation from the wider contextual considerations evident within modern organisations (Yue et al. 2008; Lin et al. 2010; Manas Tungare et al. 2010). Project teams, with their matrix of organisational cultures, thus provide a novel and suitable basis from which to develop existing information behaviour theory in a more representative setting within modern organisations, where project working is a major component of the organisation (van Donk and Molloy 2008).

Project typologies have been developed to secure organisational benefits from standardised management hierarchies and decision-making processes. However, these ignore both the importance of informal organisational structures and the efficient transfer and adoption of information. Project management research has not yet developed a sufficient understanding of project organisations and the project profession, in turn, has yet to get to grips with the informal and rich texture of information behaviour practices.

Construction project work practices involve a wide range of activities – artisan, professional, artistic and technological – and work and task information represents a wide variety of sectors. Therefore, the normative and mimetic pressure to adopt universal solutions to communication and learning should be subject to critical evaluation. The focus on ICT, research and praxis as the route for improved project reliability and success through human computer interaction (HCI) does not sufficiently recognise the role of individual and group activity in the construction and interpretation of implicit knowledge or information. This approach still assumes, incorrectly, that just increasing the resolution of the shared information in order to address complexity and spatial disaggregation leads to improved projects.

This approach has failed to recognise the complexity in human relations and their unpredictable interaction with the environment (Karlsen 2002). Whilst this perspective has been acknowledged in an epistemological sense, the basis for much of the enquiry within construction project management has been impeded by an ontological fixation with the need to minimise uncertainty through artificial representation whilst avoiding the messiness of human information behaviour. The developers of information systems have

sought to reduce uncertainty by pretending it does not exist, at worse, or by seeking to extend the normative and explicit to situations where information should more readily be acknowledged as enabled, at least in part by social factors. As Johnson (1983) concluded, where the problem domain of interest is poorly structured, humans provide a superior palette of procedures, hypothesis and effective yet simple decision rules and yet this critical aspect of human behaviour remains poorly explored within information management research. It continues to be so.

Chapter 3 - The Methodology

3.1 Introduction

This chapter sets out the rationale for the methodological considerations that led to the choice of Critical Realism and CHAT as the theoretical lens for this research. In doing, so it describes in sequence how the research questions have informed each methodological decision based upon a hierarchy of assumptions, from the metatheory to the conceptual framework. This is to ensure that each subsequent step in the research design process is a logical extrapolation of the previous component and a precursor to the next (Trafford and Leeshon 2008). Chapter 4 discusses the choice of case study method, bi-polar diagrams and the Constant Comparative Method and their emergence following the pilot study and a review of the relevant literature.

The Research Questions

1. What is the information behaviour of project teams involved in local government construction projects at concept stage?
2. What contradictions and congruencies influence the intervening variables that shape information behaviour within the project teams of local government construction projects?

After establishing the need to address the research question from a critical realist perspective the chapter will explore the methodological implications and rationale for the use of CHAT as the framework for data analysis.

Before entering into this debate, it is worth identifying the position of the extant literature with reference to the research questions in order to inform the methodology. In seeking to illuminate the literature associated with these questions, the review has identified three areas where a gap exists within the corpus. The following narrative summarises how these aspects are to be explored through the methods identified within this chapter. The details of the research method are provided in chapter 4, but the methodological approach to each gap in the literature is outlined here for clarity.

1. Information behaviour research has focussed on the individual and has paid insufficient attention to the social construction of knowledge. Collaborative information behaviour research is in its infancy; there is

no model of information behaviour for construction project teams – the research has tended to focus on human computer interaction whilst ignoring the wider social and organisational contexts within which teams' work (Reddy and Jansen 2008).

2. Construction project management literature and praxis, whilst claiming to recognise the complexity and attended and unattended dynamics of human activity, has not reflected this in the quantum of associated research or in its practice (Zwikael and Bar-Yoseph 2004); (Ernø-Kjølhede 2000). Specifically, given that information is the only artefact produced by the project team, there is only limited research on information behaviour situated within a local government or project team context at concept stage.

Approach: The research adopts a critical realist approach, reflecting the need to attend to the complex interactions and motives that arise from information behaviour within a contested political setting.

Information behaviour was explored using bi-polar surveys to elicit 'similarity judgments' to help to recognize the polymorphism of the person and group constructions. Through this and the interview data, the research identified the areas where there are tensions between the political and project objectives. A 'mixed-mode' approach to the case studies helped to identify the contextual factoring that shapes information behaviour. Finally, the use of CHAT and its attention to cultural and historical context, the structural imperative of power and actions mediated by the instruments used by project actors, was particularly useful in identifying motive.

3. Despite the plethora of reports into the UK construction industry few attend to the early stages of the project where the ability to influence outcome and cost is greatest (Abdul-Kadir and Price 1995; Matinheikki et al. 2016). Notwithstanding the ubiquity of project working and the influence of the state within the domain of construction projects there is little research that attends to it understanding (Gomes et al. 2008).

Approach: The projects teams that are the focus of the study are located within local authorities. The data collection will examine projects during the concept stage of the project development cycle.

3.2 Nature of Social Science

Whilst the philosophy of science is typified by subjective and objective perspectives, the nature of society is characterised by the "order/conflict" debate (Williams and Lewis 2008). These divisions within the philosophy and nature of social science are presented by Burrell and Morgan in a useful matrix (see Figure 3-1) that highlights four distinctive paradigms, reflecting each combination of the subjective/objective and the conflict/order debate, what Burrell and Morgan term the sociology of radical change and the sociology of regulation. However, within each paradigm there also exists distinctive theories or schools of thought, some of which do not neatly fit the radical humanism, radical structuralism, interpretative sociology or functional sociology paradigms identified by Burrell and Morgan (1979). Management research has been dominated by positivism and interpretivism as the principal research paradigms. These tend to be the datum against which research methodologies are weighed.

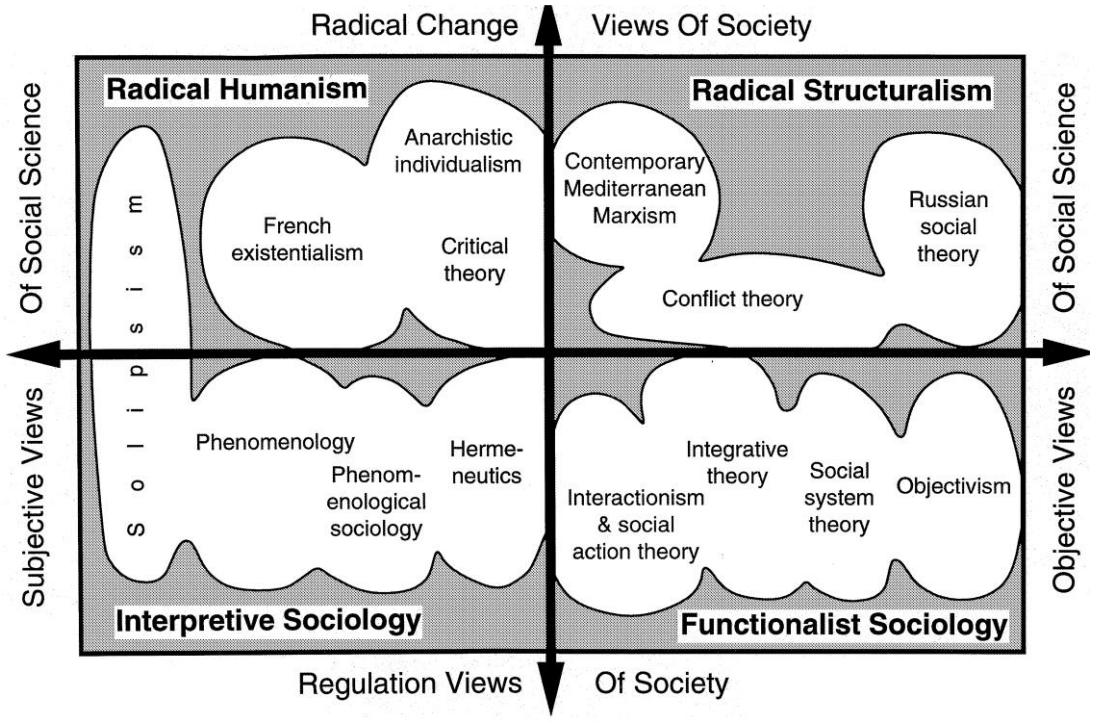


Figure 3-1: The four paradigms in organisation theory. Figure re-drawn from Burrell and Morgan 1979 by Lane (1999).

This duality of metatheory has led to a search for an alternative metaphysical

approach to positivist and interpretive polarising positions (Smith 2006; Bygstad and Munkvold 2011; Allen et al. 2013). Critical realism sits between these two poles, as it "…affirms the *objective* nature of reality which is then only known through the *subjective* lens of human understanding" (Meyer and Seminary 2007). Thus the emergence of Critical Realism has been in response to the ontological oscillations between interpretivist and positivist researchers, who essentially rely on a realist ontology but with a non-deterministic belief of causality which conflicts with their own philosophical standpoint (Smith 2006).

Critical realism uses a realist ontology with an interpretive epistemology (Archer 1995; Bhaskar 1998) and as such it contends that some theories approximate reality better than others, and that assessing knowledge can be done on a rational basis. As such, reality exists independent of the conscious and the thought processes used to engender meaning are external to the researcher and shaped by the structure of the real world (Jonassen 1991). However, much of what we know is relative and therefore can only be truly understood from the perspective of the individuals involved in the activity being observed. Yet unlike in interpretivism, reality is independent of human conception, enabling a distinction to be made between events and their causality. Whilst observable human behaviour may create the conditions for actions to occur, the actions themselves are shaped by elemental structures and process that may or be not be directly observable.

For CIB the need to attend to these contextual factors is essential, as collaboration may be contested in complex work situations (Sonnenwald and Iivonen 1999). As Hara et al. (2003) noted, different work patterns, personal beliefs and personal goals make collaboration difficult, but it may also enrich them. This need to understand personal motives speaks to a methodological approach which includes an understanding of norms and values, together with rich personal testimonies.

Critical realism helps to give a unique voice to these rich narratives and thus contribute to the development of CIB and the wider debate on the nature of project management, which has so far been dominated by positivism (Garnett 1989; Sage et al. 2014). Yet this choice also reflects the classificatory nature of paradigms, rather than the absolute sense, a view proposed by Burrell and Morgan (1979). As such, it provides scope for a pluralistic approach to data collection, a flexible framework from which to undertake

the methodology and an approach to the research that could embrace both qualitative and quantitative modes. In response to the substantiation of the research questions in the previous chapter, a number of considerations have emerged that will guide the form of the methodology, namely:

Issues	Rationale
An exploratory focus	As there is insufficient theory to construct a testable hypothesis.
Avoidance of a priori constructs	Enabling the phenomena, whose nature is as yet unknown, to emerge unfettered.
Focus on depth rather than breadth	Given the lack of extant theory, prioritising understanding over generalisability.
A theoretical framework that enables analysis at the group level	Which also attends to the perturbations affecting its constitution and activity.

Figure 3-2: Methodological considerations arising from the literature

The following sections (3.3-3.7) look at the methodological options to support the use of CHAT and Critical Realism as the appropriate theoretical lens to help address the research questions.

3.3 Paradigms

Scientific research is guided by paradigms and theories; paradigms being the major frameworks that guide the examination of phenomena with theories related to the more specific activities observed within in the influence of the paradigm (Thompson 2009). Given the lack of theoretical specificity accorded to project teams (Koskela and Howell 2002; Turner and Muller 2005) and information behaviour outside of information science (Pettigrew et al. 2001), it is appropriate that the research design begins with an overview of the paradigm choices as a way of locating each concept within the literature. This will also help to explore, evaluate and rationalise the subsequent methodological choices available to the research, the interpretation of the data and the ethical basis of the research itself.

Paradigms represent the metaphysical beliefs and methodologies that represent what we think of the world, albeit that we cannot prove them (Lincoln and Guba 1985). This paradigm-based theory-building also helps to

devise methodologies and methods that are designed to address the research question rather than following prior hypothetical deductions that are not necessarily relevant to the phenomenon being studied (Gioia and Pitre 2010). As such this section examines, after Burrell and Morgan (1979), the paradigmatic assumptions within the philosophy of social science and the nature of society and concludes with a rationalisation of the paradigm choice given the nature of the research question.

3.4 Background to the Philosophy of Social Science

Social scientists approach the world from a set of implicit and/or explicit assumptions about the nature of the world and, as a result, how it might be examined or explored (Pfeffer 1997). Broadly speaking, these are subjective or objective approaches to the nature of social science (Hammersley 1992). Burrell and Morgan relate each of these approaches to four sets of assumptions related to ontology, epistemology, human nature and methodology (see Figure 3-3).

	Subjective (Interpretive Paradigm)	Objective (Functionalist Paradigm)
Ontology	Nominalism (Relativism)	Realism
Epistemology	Anti-positivism (Interpretivist)	Positivism
Human nature	Voluntarism (Actor)	Determinism (Agency)
Methodology	Ideographic	Nomothetic

Figure 3-3: Philosophy of Social Science (Burrell and Morgan 1979)

3.4.1 Ontology

The subjectivist paradigm consists of a nominalist ontology which regards the world as external to personal cognition, made up of names and concepts which are artificially constructed as no more than convenient tools for the purpose of making sense of the world. Scientific laws are not immutable and are dependent on social processes for their acceptance and dissemination

(Latour and Woolgar 1979). The objectivist viewpoint sees the social world as external to cognition, built upon tangible and relatively immutable structures (Burrell and Morgan 1979). As such, reality exists independent of the conscious and the thought processes used to engender meaning are external to the researcher and shaped by the structure of the real world (Jonassen 1991). This viewpoint contends that knowledge is stable, knowable and largely unwavering. The world is seen as structured and capable of being modelled as a mirror of reality, in essence, objectivist research is about discovery of the objective truth (Gray 2004).

3.4.2 Epistemology

Positivistic epistemologies are based on the tradition of the natural sciences and seek to understand and predict activity within the social world by a search for causal relationships. Whether through the verification or falsification of hypothesis, new knowledge is gathered cumulatively to add to existing knowledge stores (Burrell and Morgan 1979). Anti-positivism is a term rarely used nowadays so this research will refer to social interpretivism as the terms are interchangeable. For social interpretivists, knowledge is relative and therefore can only be understood from the perspective of the individuals involved in the activity being researched. Rather than being a detached observer, the researcher must occupy the frame of reference of the person participating in the activity under investigation. Human action arises from people constructing different situations rather than being a direct response to external factors (Easterby-Smith et al. 2009). As such, objectivity and, consequently, pure research and the compatibility of natural and human sciences are rejected as a fallacy (Woo et al. 2005). Positivism has also been contested due to its inability to reconcile the context of theory conceptualisation and the context of justification (Lincoln and Guba 1985). As Cronbach (1984) argues, theory verification has trumped discovery as positivism has failed to devise a methodology for the systematic generation of theory.

3.4.3 Human Nature (Structure and Agency)

The objectivist or structural perspective is one of determinism, where activity is governed by the environment within which the activity is taking place. As a result, human cognition and action is restrained, in effect humans are a product of their environment. Subjectivists regard human activity as being

typified by free will, independent of the environment within which they are situated. This voluntarism or agency sees the human being as an intelligent free agent with the ability to act autonomously. The theories of agency have been influenced by the failure of functionalist arguments to explain the role of individuals in determining events, contending that the nature of the environment is entirely created by human thought, action and perceptions. In the context of the organisation, objectivists locate subjectivity outside the domain of the individual within the structures and discourse of the organisation whilst subjectivists highlight intentionality, seeing the individual as providing the meaning (Alvesson 2010).

3.5 Methodology

The nomothetic approach exemplifies the research methods used within the natural sciences and the testing of hypotheses using systematic techniques and protocols. The canonical nature of the objectivist paradigm means that quantitative techniques predominate with surveys, questionnaires and experimentation forming the main tenets of the research design. The ideographical approach to methodology and method is based on the belief that the social world can only be understood by seeking first-hand knowledge of the person being investigated. By implication, therefore, it places considerable emphasis on the researcher being in close proximity to the respondents and yet it also relies on the subject's story emerging during the research process. Case studies, open or semi-structured interviews, documentary analysis and participant observation are typical of the methods used in this research paradigm.

3.5.1 Interpretivism

Interpretivism rejects the view that the social world has a reality beyond the minds of individuals. The interpretivist or phenomenological approach emphasises the subjective thoughts, feelings and experiences of individual actors within the research narrative (Schutz 1972). As such, the subject constructs his or her knowledge by being an active 'experiencer', rather than being a passive receiver of information (Sveiby 1994). The social world, and hence organisations, have no substantive structure other than that created and sustained inter-subjectively by human minds. Therefore, theory building within this paradigm is primarily achieved through an inductive process concerned with the development of insights, explanations and descriptions

that reveal underlying processes, structures and through which meanings can emerge (Gioia and Pitre 1990). The methods used, such as ethnography and semi-structured interviews, tend to avoid a priori assumptions as data is collected, coded and analysed simultaneously by iteration.

From an interpretivist perspective, the sociology of regulation and the order-conflict debate is based on an implicit commitment rather than an explicit one (Burrell and Morgan 1979). Therefore the assumption of a theory of organisations is at a conceptual level problematic, as interpretivism does not accept an orthodox interpretation of any subject; instead, it seeks plurality, relativism and complexity (Fisher 2007). This sense of contradiction is compounded when interpretivist scholars enter the domain of functionalism and feel the need to share a common language and hence challenge functionalist orthodoxy (Burrell and Morgan 1979). Nevertheless, the worldview of the interpretivist means that the ontology of functionalism, and by extension much of that of organisation theories, is under constant challenge. Within a project context, this challenge has largely focussed on the perceived failures of command and control within functionalist approaches such as the scientific method, which have failed to recognise the uniqueness of each project (Gallstedt 2003; Sage et al. 2014). Nevertheless, interpretivism is not primarily concerned with explaining the causes of the phenomena, but in attempting to understand how they are experienced by those involved (Denscombe 2007).

3.5.2 Radical Structuralism

Much of organisation theory seeks to address managerial problems, enhance efficiency, learn how to exercise more control over behaviour and learn how to create and manage more effective cultures; thus reflecting the dominant functionalist paradigm (Pfeffer 1993). These measures tend to assume non-coercive exchanges as per the economic model, regulatory constraints or pressures where the role of human agency is underplayed. As a result, those harmed by these measures are often ignored along with a failure within society to acknowledge the nature of the "contested organisational landscape" (Pfeffer 1993, p178). As such, radical structuralists argue that control is not benign and involves significant hardship to those working within organisations. Whilst the functionalist perspective also claims objectivity, it is seen as failing to represent the complex or distasteful elements of capitalistic society and is therefore by extension supporting a

politically conservative bias, rather than the needs of society at large (Burrell and Morgan 1979). In a reflection of the historical legacy of social hierarchies and power relations, Cornick and Mather (1999) have noted the class divisions within construction project teams where architects and engineers are often seen as consultants with vocational motives who are paid a fee, rather than contractors who are paid a price and for whom profit is paramount (Haksever et al. 2001). After Weber's contention that power does not rest solely with ownership, Cornick and Mather's comments reflect the perception that architects and engineers are seen as having a greater ability to use discretion, creativity and agency to create power for themselves by applying their knowledge (rather than their labour) to production (Hicks et al. 2009).

However, radical structuralism has been criticised for being too nominalist and objective – whilst shedding light, at least on a macro level, on the structural tensions that exist within organisations. But this has limited use when it comes to flexible, autopoietic project teams, whose composition is a construct of the personalities and power relations exercised most visibly from a bounded team perspective. Enablement and constraints derive from properties that are structural and cultural, with the power to act as barriers or enablers projected from agents. Notwithstanding this, the initiation of these causal powers is dependent on agents developing the project upon which they have influence. Without this intervention, these powers remain unused and unrecognised. Therefore, in order for public policymakers to understand the consequences of their actions or inaction, it is imperative that they can differentiate between the presence of structural and cultural properties and the application of their causal powers. Whilst these causal powers are significant, they are also susceptible to being transitory in their impact as human agency and its reflexive abilities can learn to resist or to evade them (Archer 2001).

3.5.3 Positivism

Influenced by the writings of Comte, Durkheim and Pareto, positivists (or functionalists) seek rational explanations for the status quo by examining relationships that could lead to generalisation and universal principles (Gioia and Pitre 1990). In general terms, functionalists take a social-theoretical stance that is realist, positivist, deterministic and nomothetic (Burrell and Morgan 1979). Usually, they take a problem-solving approach which seeks

rational explanations of cause and effect. Social change is promoted through social engineering, emphasising the importance of order and the maintenance of stable societies. Functionalism assumes the world is composed of relatively concrete artefacts and relations which can, using approaches derived from science, be identified, measured and analysed. Until recently, the study of organisations has been dominated by social science versions of natural science models and as a result much of organisational theory-building has taken place bounded by the approach of positivism (Gioia and Pitre 1990; Waragarn and Ghazal 2007). As such, the assumption of an objective organisation has resulted in the predominance of positivistic methods – both experimental and quantitative – with theory evolving from deducing facts from tested hypotheses. The scientific management school, which forms the basis of much of the project management approach, is based on the functionalist paradigm, despite many early studies and proponents such as Fredrick Taylor using ethnographic methods from which to develop initial theories (Mannen - forward in Gummesson (2000)).

3.6 **Critical Realism**

However, intermediate positions have also been advocated with internal realists, for example, following a representationalist ontology which contends that, whether or not a phenomenon exists, it is only possible to gain an indirect acquaintance with it (Easterby-Smith et al. 2008). Critical realism assumes the existence of a real world independent of our knowledge of it (Bhaskar 1998), but our knowledge of them is socially constructed and fallible (Bygstad and Munkvold 2011).

For critical realists, reality is seen as stratified into three domains: the actual, the real and the empirical. The actual refers to outcomes and events that occur in the real world. The real domain consists of physical and social objects with capacities for behaviour termed mechanisms. Whilst these mechanisms may remain dormant, under the right circumstances they can act in unison to initiate events in the domain of the actual. In the third layer, these events may be perceived in the empirical domain. The real and actual domains can only be perceived imperfectly, hence the objective reality of the critical realist is constructed from events and their underlying causes (Clark 2011).

Like a translator, Critical Realism seeks to mediate an understanding of cause and effect. Attempts can be made to translate any language from one to another and there are very simple objects, like a ball, that can be translated with very near perfect translation. Other objects, concepts and theories are more difficult to translate, as the norms and values needed to make sense of these is important; hence cultural and political factors can exacerbate the difficulties in seeking the truth.

However, the number of studies based on Critical Realism perspective is limited (Bygstad and Munkold 2011). Whilst critical realists have been clear in arguing that “structure” and “agency” represent different yet related sets of nascent powers and properties, an agreed account of the process of mediation between them remains elusive. As Archer (2001) has argued, upwards conflationists have claimed that agency is determined by structure and downwards conflationists that structure is determined by agency. This standpoint of polar opposites undermines the ability of Critical Realism to transcend dualism.

When applied to social sciences, Critical Realism can provide ex post explanations but cannot predict them. Human actions help to shape society and therefore the context of activity in turn feeds back to affect future, and indeed, parallel actions on a scale that is exponential. These perturbations are specific and bound in a particular space and time and cannot be generalised to provide the control of the laboratory. Whilst cause and effect are therefore unattainable, Critical Realism seeks to go beyond what can be observed in order to investigate underlying and observable factors. It does this by taking multiple perspectives on similar problems and by seeking to develop a deep understanding of activity, going beyond observable events to theorise and provide explanations for complex social phenomena. To do this, it requires a wide range of primary sources (Pawson et al. 2005).

Within the emerging power assumption of Critical Realism is the idea that objects are seen to possess causal powers by virtue of their intrinsic structure (Allen et al. 2013). Within the social world, the application of this principle is mediated through the lens of social structures. Social structures relate to what Allen et al. (2013, p.837) term the "enduring social of the social positions into which individuals are said to slot". Within project teams, a manager’s position within an organisational hierarchy confers upon them certain privileges and constraints that affect the activities through which

they are reproduced and transformed. For example, service managers who have line management authority over people contributing to the project team may also be constrained by the need to deliver business-as-usual activities, irrespective of the perceived importance of the project activity.

Social structures are distinguished from natural systems in that the latter can exist within human intervention. Critical realists argue that social structures are distinct from agency-activity and are thus analogous to structures that occur in nature. This is because they can be observed and researched and as such the agency of individual actors is linked to the social structures such as the nature of society, economic activity. As such, social activity is "relatively autonomous" from the context of its social structure (Allen et al. 2013).

Critical realism also explores the idea of causality, enabling the seeking of answers to the “why” questions and, in the case of this research, specifically the motives that underpin activity. The search for these generative mechanisms operates at a deeper analytical level than the constant conjunctures, which Mutch (1999) argues positivists mistake for cause and effect. However, it is not a predictive theory. This is because the inter-personal relationships that exist within human schemas are dynamic, reflexive and, as open-system social structures, cannot be controlled.

For those sympathetic to the interpretivist viewpoint, it provides an ontology that emphasises the central role of meaning when interpreting activity and context, without denying the existence of the subject (Smith 2006). With specific reference to the study of projects, Morris (2013) argues that Critical Realism is the appropriate theory for studying project management as it incorporates a normative standpoint while acknowledging the value-laden and interpretative nature of knowledge. This makes it particularly attractive when needing to address the question of “how certain are we that our knowledge is representative” (Morris 2013, p.3). Fundamentally, however, Critical Realism is a refining theory that takes preliminary understanding through a clash of ideas to provide illumination rather than generalizable theories, together with contextual fine-tuning rather than standardisation (Pawson et al. 2005).

3.7 Cultural Historical Activity Theory (CHAT)

Whilst realists are clear that structure and agency form distinct elements

with their own properties and powers, there is limited agreement on how they are mediated (Archer 2001). For example, Allen et al. (2013) have argued that Cultural Historical Activity Theory (CHAT) foregrounds semiotics and the mediation of subject and object which have until recently been neglected by Critical Realism. Indeed, both Critical Realism and CHAT have their roots in Marxist theory pertaining to the dialectical materialism which go beyond interpretivism and positivism. The work of Ilyenkov, whose work on dialectical logic has played an important role in helping to develop the philosophical basis of CHAT (Allen et al. 2013), has been compared to Critical Realism (Brown 2002).

Inspired by a rejection of functional modes of analysis that separated intellect and affect, CHAT was originally developed in the 1930s by Russian psychologist Lev Vygotsky (1934-1986) to address the fundamental question of what is the relationship between humans and their environment. Vygotsky asserted that our interactions with the world are mediated. In doing so, 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). According to Leont'ev, the impetus for an activity system is the collective consciousness of the object of their activity (Leont'ev 1978). Thus CHAT is inherently a dynamic structure with its parts subject to constant change, motivated by tensions and contradictions, which it seeks to reconcile within the activity system and which also serve as a means through which new knowledge about the activity system can emerge (Engestrom 1987). These contradictions, that encourage participants to seek resolution to logically incongruous situations, are apparent within project teams, given the everyday tensions between plan-making and political expediencies. Contradictions are not just problems to be resolved but are “historically accumulating structural tensions within and between activity systems” (Engestrom 2001, p.137). The primary unit of analysis within activity is collective action which, provides context and meaning through which an historically revealing dialectic can be realised (Engestrom 1993).

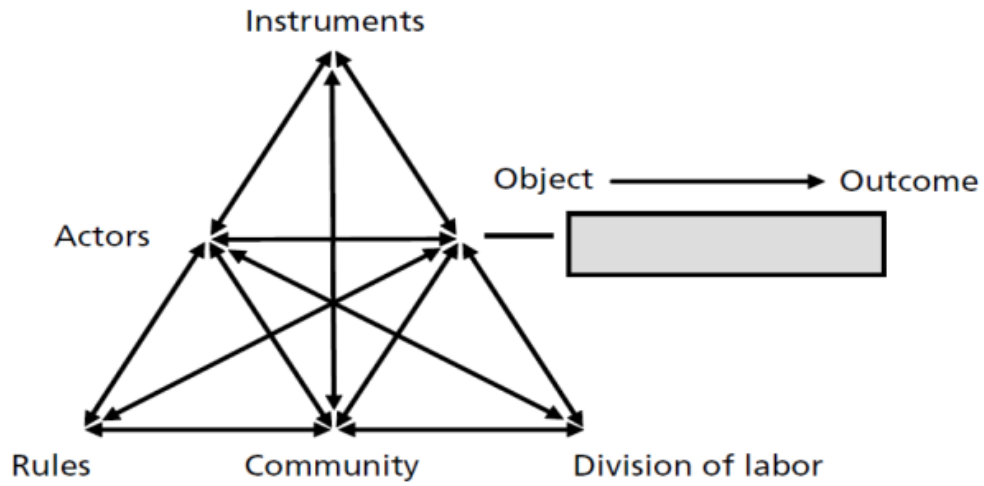


Figure 3-4: Activity Theory Model (Engeström 1987)

Engeström supplemented Vygotsky and Leont'ev developments to develop a third generation CHAT model (see Fig. 3-4 Activity Theory Model). According to Engeström, a triggering action such as the perceived failure of the project manager, a reorienting of the client's priorities, or a major rule change affecting the stability of the project epitomises the contradiction inside the activity stream or between parallel systems (Engestrom 1999). Within CHAT, four contradictions may occur within the activity system (Engestrom 1987), namely:

Level1:	Primary contradictions are found within a single node of the activity system when one of the elements contradicts itself. These can be viewed as manifestations of the actor's affective or emotional needs where the object of that particular activity is not shared (Wilson 1997; Ibrahim and Allen 2012).
Level2:	Secondary contradictions occur between the nodes.
Level3:	Tertiary contradictions occur when there is tension between the object motive of the existing activity state and the desired activity state.
Level4:	Quaternary contradictions occur between parallel activity

	systems.

Figure 3-5: Activity Theory Contradictions

Whilst focussed primarily on human activity, the ability to inculpate 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 understanding technology 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, mediate activity whilst achieving their functionality through it (Suchman 2000). In terms of its relevance to project activities, Vartiainen et al. (2011) have identified the following complementary features of CHAT:

- CHAT is contextual and aimed at understanding historically specific local practices that mediate tools and social organisations
- CHAT seeks to describe, explain and influence qualitative changes in human practice
- CHAT distinguishes between temporal goal-directed actions and more permanent object-oriented activity systems
- CHAT is focused on collective work, a fundamental tenet of project practice, as the principal unit of analysis

Whilst the relevance of CHAT to the social systems evident within project teams is clear, unlike in Grounded Theory, there are no established and accepted techniques for putting CHAT into practice (Nardi 1996). Efforts to make CHAT operational have tended to focus on general guidelines. For example, Engeström (1993) has identified three principles to help guide the application of CHAT:

- The need to focus on collective activity
- The need to identify both internal and external contradictions within the activity system
- The need to analyse the historical development of the activity

In the context of Human Computer Interaction (HCI), Nardi (1996)

extended the broad principles of Engeström to propose that CHAT research should:

- Be longitudinal to enable the analysis of user motivations to be undertaken
- Have regard for the broad patterns of activity to establish the overall direction of the activity
- Use a variety of data collection techniques, avoiding an over reliance on one
- Ensure that the researcher understands the world from the respondent's viewpoint

Building on the work of Mwanza's (2002) Activity-Oriented Design Method (AODM), Mwanza and Engestrom (2003) have proposed the Eight Step Model (ESM) to focus research questions in an attempt to improve the operationalisation of CHAT. These principles are carried forward within the application of the research methods and processes examined in the following section.

In this research Constant Comparative Method underpins the data analysis, with CHAT providing the holistic and dialectical perspective needed to develop robust, logical and consistent theory. In adapting Mwanza's AODM, the outline of the data (steps 1-9) and discussion (step) chapters will reflect the template provided in Table 1.

Table 1: The Eleven Step Approach (adapted from Mwanza 2002)

Step 1	Areas of Interest	What kinds of activity is the research going to focus on?
Step 2	Context and History	What is the essence of history which creates meaningful differences in different components of the activity system?
Step 3	Rules and Norms	What rules, norms and values (hidden and explicit) govern or affect activity?
Step 4	Division of Labour	How is this organised in terms of hierarchies, power and status?
Step 5	The Object	What is the problem to which the activity is directed and why is it important?

Step 6	The Subject (Actors)	Who carries out the activity?
Step 7	The Community	What is the political and professional environment which shares the same general objective?
Step 8	Tools	What tools mediate the project domain activity?
Step 9	Outcome	How has the object been transformed into the outcome and what was the role of the physical and symbolic tools, instruments and signs?
Step 10	Contradictions and Motives	What are the contradictions, tensions and motives involved?
Step 11	Modelling the Case	What model of information behaviour emerges from the case?
Step 12	Discussion & Conclusion	What are the implications for theory and practice?

3.8 **Conclusion**

This chapter has presented the justification for the use of Critical Realism and CHAT. Given the disjuncture between the 'see as a state' philosophy of project method and much less certain praxis, this ability to distinguish between what is observable and what are the underlying factors is essential to comprehension. A critical realist approach allows this depth of analysis to take place within a research method that privileges the use of a mixture of data collection approaches, as described in Chapter 4. The highly contextual approach of CHAT and its focus on collective work provides complementarity with both Critical Realism and the methods required to inform the research questions against the backdrop of complex social and cognitive phenomena.

Chapter 4 - Method

4.1 Introduction

The realist approach does not have any preference for either quantitative or qualitative methods (Pawson et al. 2005). However, the underlying philosophical approach offered by Critical Realism supports a 'mixture of approaches', as this enables researchers to highlight the relationship between local practices and activity occurring at another level of analysis (Zachariadis et al. 2010).

Following Wilson's (1980) call for a greater emphasis on qualitative research methods within what was then termed user studies, human information behaviour research now has a clear emphasis on qualitative and triangulation approaches involving interview and survey methods in particular (McKechnie et al. 2002). Qualitative research emphasises the interplay between variables and their context as the most suitable means of addressing the research question, using a naturalistic approach that seeks to understand phenomena in context-specific settings (Hoepfl 1997; Golafshani 2003). As a result, qualitative research has a special value for investigating complex and sensitive issues (Trochim and Donnelly 2006) where research is exploratory (Creswell 2003) and is especially suitable for subjects where there is limited research (Hoepfl 1997). Using these assumptions to construct theory based on multiple social interactions requires:

- a clear perspective on the nature of interactions, both in terms of the hierarchy of that interaction and the motivation that propels it, and;
- a theoretical perspective that helps to explain why particular patterns of interaction take place (Porter 2003)

4.2 Case Study

The literature review has confirmed the gaps in the research. Case studies are useful where current perspectives seem inadequate. They can also be used in situations where only limited reliance can be placed on earlier literature or prior empirical evidence whilst opening up the potential of creating novel theory to replace extant or inadequate theory (Eisenhardt 1989). In addition, case studies are especially useful when an in-depth

analysis of situations and perceptions is required (Wilson 2000) and where understanding the case, rather than population as a whole, is paramount (McHugh and Hogan 2010). Flyvbjerg (2006) has argued that the closeness of case study data to real life phenomena and its wealth of details are important for the development of a nuanced view of reality. By putting information behaviour in its wider context, case studies are better able to understand and explain the phenomena being observed (Kitay and Callus 1998). Furthermore, cases are important for developing the researcher's own context-dependent experience and the skills needed to do good research.

In so far as generalisations are possible, the research must be viewed primarily from the perspective of the user and case studies provide a better epistemological fit with the readers' experience and allow a natural basis for generalisation (Stake 1978). Put simply, if you want people to understand things better put in within a context or form that they usually experience it (Lincoln and Guba 1985). The other side to this coin is the need for researchers to possess the skills to participate in the social activities described. The researcher must also have "mutual knowledge", shared by the actors whose activity constitutes and reconstitutes the social world (Giddens 1982). In this context it is important to note that the researcher's stock of personal and professional knowledge can be an invaluable research resource (Phillips 1971). This is outlined in section 1.4.4.

There are various methods of approaching the writing-up of the case study. The linear, chronological, suspense and unsequenced approaches were rejected, as they fail to provide the necessary iteration to the analysis of the case studies forming the basis of developing new theory. Given the exploratory nature of the research, a theory-building approach was chosen so that each step can be verified before constructing the next.

Table 2: Case Study Matrix (Yin 2009)

Research Structure	Purpose of Case Study		
	Explanatory	Descriptive	Exploratory
Linear			
Comparative			
Chronological			
Theory-Building			
Suspense			
Unsequenced			

The theory-building approach also incorporates elements of the comparative approach – looking at the same issue or theory component from the perspectives of each case study (see Table 2). This consideration is useful given the discrete activity exploring components within CHAT. As such, it follows that an understanding of the social world can only be understood by seeking first-hand knowledge of the person being investigated. By implication, this places considerable emphasis on the researcher being in close proximity to the researched and yet it also relies on the subject's story emerging during the research process.

In addition, the need to understand the nature of information behaviour requires multiple viewpoints (Pettigrew et al. 2001), which also helps to strengthen the grounding of new theory as triangulation is possible from varied perspectives (Eisenhardt 1989). Therefore, case studies captured the essential components of information behaviour activity through a variety of data collection methods – primarily interviews – which can provide an insightful means of discovery (Harditttai and Hinnant 2006).

The constant comparison method was used to form categories, establish boundaries, discern conceptual similarities and to discover patterns (Boeije 2002). In addition, an adapted Repertory Grid Technique (RGT) was used to

explain the structural tensions and personal dynamics within and external to the project domain. This was supplemented by documentary analysis that specifically focusses on the historical context, norms and values and policies to better understand the tensions between desired and actual states of activity. Section 4.3 explains why the bi-polar method was used in tandem with CHAT and to compliment other methods of data collection and analysis.

The in-depth interviews were used to generate an "authentic insight into people's experiences" (Silverman 1993, p.91). From a critical realist perspective interviews describe the respondent's point of reality, but to understand that reality one needs to take account of the social context (Crouch and McKenzie 2006). Experts within a particular domain carry with them considerable knowledge about the nature of the domain, its operation and relationship with variables, such as other domains (Nelson et al. 2000). This knowledge is important to the understanding of CIB and SIB within organisations and the norms and values that shape them. Literature on organisations (Schein 2004), information management (Davenport 1994), information cultures (Choo et al. 2008), knowledge management and project learning (Reich et al. 2012) all attest to the importance of culture and its norms and values in the role of dynamic work activity (Choo et al. 2006).

One approach to retrieving this information is through cognitive mapping, which is used to record people's perceptions of their environment and what they know and believe (Nelson et al. 2000). Also, whilst norms and value influences and motives can be hinted at in interview and discerned indirectly from reports, it was important that the respondents were given an opportunity to describe their own perception of these norms and values.

4.3 Bi-Polar Diagrams & Repertory Grid Technique

Every construct is bi-polar as it includes an awareness of similarity and difference and is given meaning by the dialectical relationship between the two poles (Stojnov 2004). After (Kelly 1991), the interviews were supplemented with a bi-polar analysis to elicit the personal constructs of each respondent, and to compare and contrast individual values and

organisation norms within the project domain. This information provides the research with some of the organisational and project domain level influences that help to distinguish between observed events and the real mechanisms which cause them. This was to help make explicit any underlying contradictions that would shed light on motive and any gaps in the interview data. From a realist perspective, these accounts are used to help formulate the subjective and social meaning within the respondents' accounts which are casually related to the respondents' actions (Crouch and McKenzie 2006). Constellatory stereotypical construing was used as it plays a part in daily routines and provides an efficient way of making sense of the world (Kelly 1991).

Repertory Grid Technique (RGT) defines the constituent parts of the construct whilst providing a method for understanding the relationships between them. It provides a method for making explicit the informal and implicit norms that underlie expert practice (Hillier 1998; Björklund 2008). Latta and Swigger (1992) conclude that the use of a common set of constructs shows that RGT can be used to explore communal knowledge. Whilst Kelly emphasised the "constitutive nature" of perception, he also believed in an objective reality and that people constantly revise their constructs to bring them closer to objective 'reality'.

Figure 4-1 shows an extract of the bi-polar questionnaire instructions. It asks respondents to indicate to what extent the researcher provided constructs match what happens in the team (or board, depending on the role of the respondent). These supplied or theory derived constructs (Stewart and Stewart 1981) provide the basis for comparison with others in the project domain. The bi-polar survey is designed to capture the norms "as is" within the team (T) as affected by situational and contextual factors emanating from the project domain. The next question is about what "should be" the case, in order to capture the values of the individual respondent (I) (Frese 2015). The marks placed by the respondent on the horizontal line are converted to scores of between +49 and -49 to represent the left (green) and right (red) constructs respectively (see Appendix 3 – case 1 & Appendix 4 – case 2). Marks placed equally between the two constructs value 0. Values of +5 to -5 are regarded as equivocal given the potential margin for error between these scores and 0. For scores in between, the following narrative labels are used

along with the scores themselves for reference. When two scores are displayed in the text, for example 24, -19 the first number relates to the respondent's value and the second to their perception of the norms for the given construct. Table 3 shows the link between the bi-polar scale and the narrative description.

Table 3: Bi-polar Categories

Narrative label	Score
Strong support	34-49
Clear support	21-33
Support	6-20
Equivocal	5 or less

The bi-polar analysis led to the development of a number of radar diagrams (see Figure 5-1) contrasting the bi-polar constructs of each respondent. These are reflected in the findings (see chapters 5 and 6) and are used to support the other data collection methods and the CHAT analysis, rather than as standalone statistical evidence.

SECTION D: BI-POLAR SURVEY

For each of the statements in the following boxes can you please...

1. place an '**T**' on the line near to the statement that best reflects **what happens within the team** – the closer you place the 'T' to the statement the more the teams actions reflect it.
2. place an '**I**' on the line near to **the statement that reflects what you think should happen** – the closer you place the 'I' to the statement the more that you agree with it.

So for example if the teams actions were close to position A and you thought they should be closer to position B you might respond in the following way.

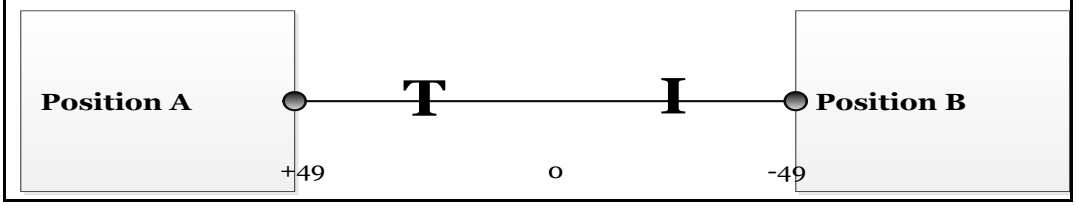


Figure 4-1: Bi-polar question extract

4.4 Constant Comparative Method

Teams and their social relations are complex phenomena (Moore and Dainty

2001). In order to explore those social relations, the level of observation must capture the view of the responder together with the wider cultural and historical setting in which the activity is taking place. Thus, a mixture of approaches can provide more perspectives on the phenomena being studied (Strauss and Corbin 1990; Easterby-Smith et al. 1991).

For this research, qualitative methods are given precedence for their ability to portray the multiple realities that were encountered during the researcher's experiences of project management practice in local government. Whilst the research acknowledges the utility of quantitative methods, and indeed makes use of RGT (see Figure 4-1), the intention is to develop new theory through the emerging data, as little extant theory exists to create a plausible hypothesis. Given this lack of extant theory, the research needs to be grounded within the data to develop an explanatory theory rich in its description of the relationships between activities, events and situations whilst providing a theory for the casual relationships that existing within the phenomena.

Constant comparative method was developed by Glaser and Strauss and Goetz and LeCompte (1981) have described the method as combining inductive category coding with the simultaneous comparison of all the observed social incidents. Due to the amount of data involved, NVivo 10, qualitative data analysis software, was used to code the interview transcripts, observations and documentary evidence. Microsoft Excel 2016 was used to prepare the bi-polar diagrams and Microsoft Visio 2010 was used to create the diagrammatic representations of the coding process. Details of the encoding and analysis process emerging from the blending of Constant Comparative Method with CHAT is highlighted in Table 4.

Table 4: Data Coding and Analysis

Stage	**Data analysis process**
Collection	Public document collection and ongoing literature review. Documents shortlisted (see 4.6 for details). Interviews, repertory grid survey and private document collection undertaken. Researcher notes prepared before and after interviews. Visit to project location to take photographs, collect publicly available data and to add to researcher notes.
Initial analysis	Pen portrait of each respondent and context produced from interview, RG and document analysis. Data used to ensure

	consistency with the next stage.
Comparison within single interviews	Open coded interviews (including the use of in-vivo coding) to interpret parts in the context of the whole narrative. Labels informed by the literature, both praxis and theory, together with the researcher's own experience. Internal consistency checked within text and then across other data sources. Similar labels compared again to elicit differences or to reinforce similarities. All subsequent interviews treated as above.
RG and documentary analysis	RG (aided by MS Excel) and document analysis coded separately to generate case nodes. This data provides context, triangulation and challenge to the data analysed in subsequent stages.
Comparison between interviews within the project team	Comparison between interviews of other project team members who share the same project context. This level of analysis was used to explore and interpret the patterns and links between the same or similar open coded categories. Built up categories to define concepts and themes.
Comparison of interviews from project team and project board	A. Comparison of interviews between project team and project board members with reference to the concepts and themes arising from the previous step to enable triangulation. B. Comparison of interviews between service and project orientated respondents with reference to the concepts and themes arising from the previous step to enable triangulation.
Activity system (mezzo level) analysis	Once all the respondents' data is taken through the above stages the core themes were used to develop a rich case narrative to include an explanatory account of the contradictions and congruencies that motivate the information behaviour of the project team within its domain.(Boeije 2002)
Case comparison	Concepts and themes emerging from the project team and project board compared across cases with regard to their experience of the information behaviour phenomenon (Boeije 2002) to inform the development of models and broad conceptual findings (with the aid of MS Visio 2010).

4.5 Case Study Councils

Each case involves a large unitary authority in England, responsible for all the functions of local government within its defined boundary. The concept stage, sometimes referred to as the early stage, includes all the activities from when the idea is conceived to when the decision to finance the project is made (Williams and Samset 2010).

In both cases, the services offered from the existing building are perceived as

being well regarded and therefore politically sensitive. The objective of the project team was to take a broadly defined corporate need, identified by the project mandate. Then it seeks to turn this need into a defined project capable of providing the framework required to instruct architects and others to devise the design options needed to help reconcile the socio-physical needs and constraints of the human and the physical city, subject to the appropriate political mandate.

Whilst the subsequent design stage poses significant technical and financial challenges for the authority, the concept stage is where the political skills needed to reconcile "service as usual" needs and transformation change embodied by the project are under most scrutiny. The primary interviews and RG surveys took place with the respondents in meeting rooms located within their workplace.

In case 1 the aim within the project mandate, the first formal explicit statement of project intent, was to review a cultural services building (and the services within it) before putting forward options to enhance the appeal of the town to visitors and residents through the existing building or a replacement one. Within this objective, a critical decision is whether the cultural service remains within its current building, as it has done for nearly a century, or whether it moves to a purpose-built facility, most likely in a less central location. At the time of the interviews, case 2 was at the subsequent early design stage but respondents were asked to reflect on the concept stage and the questions were framed to achieve this point of convergence. The documentary evidence analysed in both cases focused on the concept stage of each project. The main similarities and differences between the two case studies are summarised in Table 5:

Table 5: Case Demographics

Variable	Case 1	Case 2
Type	Unitary authority	Unitary authority
Domain	Project Team/Project Board	Project Team/Project Board
Seniority	Project Manager and Senior Officers	Project Manager and Senior Officers
Project Stage	Concept	Concept/Outline Design
Documents	Committee Reports, Project	Committee Reports, Project

	Methodology, Media Reports, Press Releases	Methodology, Media Reports, Press Releases
Formal	Semi-structured interviews	Semi-structured interviews
Informal	Discussions with project director	Discussions with project director and senior project managers (2)
Service Focus	Two existing cultural assets	Two existing cultural assets
Politics	Inconstant political arrangement	Stable political arrangement

4.6 **Fieldwork**

Agreement to undertake each case study was gained through unstructured interviews with four gatekeepers, one for case 1 [R106] and three for case 2 [R201, R204 & R205]. A project plan of the research, a risk plan, confidentiality agreement and Q&A assessments were also provided to secure access (see Appendix 5). The unstructured interviews took place as part of the access process and provided context for the semi-structured interviews. The findings from these discussions were coded as part of the data analysis process. The case 1 gatekeeper [R106] and one of the case 2 gatekeepers [R201] were also interviewed as part of the formal semi-structured interview process.

To maintain anonymity, the respondents' names have been changed, with a code beginning with R to represent respondent and the following digit to represent the case number (see Figure 4-1). The final two digits represent the order in which the respondent was interviewed. Therefore, 'R202' represents the second respondent interviewed in case 2. Documents begin with the prefix 'C', followed by the case number and then D followed by the document number', e.g. C2D4 is number 4 document in case 2. The case study participants and their role in the fieldwork is summarised in Table 6.

Table 6: Case Study Participants

Participant	Ref.	Interview	Survey	Domain
Case 1 – 'Council A'				
Sarah - Project Manager	R101	SST	Bi-polar	Projects; PT
Gillian - Programme	R102	SST	Bi-polar	Programmes; PT,

Manager				PB
Steven - Director of Assets	R103	SST	Bi-polar	Asset Man.; PB, LM
Adam - Head of Libraries	R104	SST	Bi-polar	Libraries; PT, LM
Nancy - Head of Communities	R105	SST	Bi-polar	Communities; PT, LM
Frank - Projects Director	R106	US x2, SST	Bi-polar	Projects; PB, LM
Graham - Executive Director	R107	SST	Bi-polar	Deputy CEO; PB, LM
Peter - Director of Culture	R108	SST	Declined	Culture; PB, LM
Case 2 – 'Council B'				
Geoff - Projects Director	R201	US x2, SST	Bi-polar	Projects; PT, PB, LM
Lucy - Head of Culture	R202	SST	Bi-polar	Culture; PT, PB, LM
Den - Consultant PM	R203	SST	Bi-polar	Consultant; PT, PB
Peter - Head of Projects	R204	US	N/A	Projects; LM
Donald - Strategic Officer	R205	US	N/A	Projects; LM
Interviews: US – unstructured/SST – semi-structured/number of interviews (e.g. US x2 means that there were two unstructured interviews with the respondent). **Domain Participation:** PT – project team/PB – project board/LM – line manager (business as usual service). **Employment:** all respondents are employed by the council or on a consultancy basis in the case of R203. Actual names and job titles have been changed to protect anonymity.				

Case 1

The primary data collection method used within the case study was the narrative interview with (n=8) participants (n=10 interviews in total) within the project domain. All but one of the interviews was face to face, with the other taking place over the telephone. The primary case study interviews were based on semi-structured interviews with main questions and supplementary prompts used as required. Several of the questions related to the situatedness of the respondent within the project domain and therefore there are some minor differences in questions depending on whether they are within the project team (Appendix 1) or project board (Appendix 2).

In addition, bi-polar surveys (n=7) were completed to contrast respondents' personal construction of how the project should be with their perception of the project activity system as it was. One respondent whose interview had to

be carried out over the phone did not return his bi-polar survey, despite requests to do so. His response reflected the time constraints on senior staff: “Sorry, I’ve run out of time”. Nonverbal communication was also recorded independently by the researcher, for example gestures, laughs and so on. Other observations were undertaken during visits to the offices of the participants, one within a main council building used to house most council staff, and the building which the project is focused on. The activity within and external to the community building was observed by visits to the publicly accessible areas of the building. Secondary observations and analysis came from documentary analysis, including council reports, project documentation and reports in the local press. After reviewing over 100 documents and other pieces of information, 27 were chosen to contribute to the case study, reflecting the time constraints of the researcher. Some of the documents that were not specifically used did form part of the chronology that helped to provide context for the research.

Case 2

In case 2 only three officers (n=3) were available to participate in the research through interviews and bi-polar surveys. All three were members of the project team and included the consultant or client project manager who was hired from an external contractor, the head of projects and the head of the service that funds and supports the community service operating from the cultural buildings. The latter acted as the de facto project manager. One respondent, Geoff [R201], also took part in two unstructured interviews before the semi-structured interviews. All three respondents were also able to represent, from their point of view, the wider project domain as all three also attended the project board. In both cases, all the project domain participants, the project team and board members, were asked to participate, leading to the self-selection of interview respondents.

In addition, two interviews (n=2) were carried out with members of the council’s projects service. One respondent, Peter [R204], managed other project staff and the other, Donald [R 205], managed the information systems used by project staff and helped to write the council’s project management methodology. These unstructured interviews form part of the context for the case along with secondary data, primarily in the form of council documents and media reports. After reviewing 79 documents and other pieces of information, 34 were chosen to contribute to the case study.

The interview questions asked of the project team and project board are in Appendices 1 and 2 respectively, with the corresponding bi-polar questions in Appendices 3 and 4. The project board questions were similar to those of the project team, with small variations to reflect the context in which each group operated. Visits were also made to each of the sites involved in the case studies to record images and to get a sense of how the community interacted with the existing buildings and, as in case 2, the development site.

4.7 The Researcher

The researcher has over 25 years' experience working in local government, primarily as a manager working in urban planning, regeneration and capital projects. This experience was useful from a number of perspectives. Firstly, the gatekeepers and respondents may have judged the researcher an insider, thus increasing the likelihood of getting access to this unexplored and sensitive area of local government. Secondly, this perception of being a 'fellow insider' may have increased the likelihood of securing internal consistency within the interview data provided by respondents. However, there is also a minor potential for bias and this is addressed in section 4.11.5.

4.8 Sample Size

Whilst the number of cases is small, there is justification within the canon of qualitative research for the approach outlined in this methodology. Fundamentally, the purpose of qualitative methodology is to find out what exists, rather than to count how many things happen (Crouch and McKenzie 2006; Mason 2010). Specifically, within purposeful sampling it is not the number of people per se but the incidents, events and experiences explored and what they tell us that is important (Strauss and Corbin 1990). In terms of the number of participants, Morse (1994) has recommended that studies designed to discern the essence of a given phenomenon could include about six participants. A study by Jette et al. (2003) into decision-making in an acute care setting used purposive sampling to interview nine respondents.

For some respondents a single case may be enough, provided it is unique and not comparable to other cases. Becker, author of Outsiders (Becker 1963), which helped to develop labelling theory, argued that a single interview is sufficient to establish whether something is possible and that it may also

only “take a few interviews to demonstrate that a phenomenon is more complex or varied than previously thought” (p.5).

Jette et al. (2003) have also proposed that the domain expertise of the researcher in the research topic can reduce the number of participants required in a study. According to Ragin (1992), the researcher’s proximity to case study data and the ability of the actor to talk back explains why qualitative research using small numbers is often at the vanguard of theory development. This has also had a substantial tradition of research that is deeply embedded within the local context. Chatman’s (2000) research into the social interaction within informal “small worlds” was heavily context-driven and has shed light on several under-researched areas of information behaviour and praxis.

The aim of collecting research data is to contribute to a better understanding of theory. Lincoln and Guba (1985) have argued that small sample sizes may be sufficient to permit valuable generalisations from and about cases. Purposeful, non-probability sampling is appropriate for in-depth studies of a few cases (Bernard 2006). For this research entry to each of the selected cases was via a gatekeeper(s), who required a project plan for the research in order to evaluate the risks and benefits of participation. Whilst both cases involved interviewing all of the members of each project team, the necessity of using a gatekeeper meant that there was an element of non-probability sampling. Specifically snowball or respondent-driven sampling was used to locate people who then recommended others.

4.9 Pilot Study

Prior to the commencement of the primary data collection, a series of interviews and the bi-polar questions were undertaken to test the primary methodological tools proposed as part of the case study approach identified earlier. There was a particular focus on interview and bi-polar questions, along with the analysis of several documents. The empirical and practical lessons from the pilot study were incorporated within the final method.

4.10 Limitations

The sample size of each case study is limited, with eight respondents in case 1 and five in case 2. A total of eight local authorities were approached

requesting access to their project teams at the conceptual stage of their projects. However, this stage is often before projects are public. In particular, the thoughts and workings of the project team are rarely made public, due to uncertainty and potential for reputational damage. Project sponsors are particularly difficult to get access to. As Crawford (2008) noted:

> "Sponsors are notoriously difficult to access, either for research or for any form of training and development for the role. They usually claim that they, as members, almost by definition, of senior management in the permanent organization, are too busy to commit time to discussion or development of their competence in a sponsorship role. They are only marginally members of the project management community and see little value in contribution to research or developing skills that they perceive to be directly project-related" (p. s47).

Within local government this is a hidden environment given the stage of the process and the involvement of a contested asset where a settled political will is in doubt. The potential political, financial and reputational risks are far greater than in the private sector. People do not readily talk in these environments and therefore the access obtained is unusual and unseen in this context. As an insider, the researcher was able to get access to this closed world. Whilst the sample size is not large, it has depth by virtue of the information and the multi-level analysis which helped to provide a rich picture of the phenomena.

This difficulty in access led to a decision to pursue a combination of respondent driven convenience sampling and snowball sampling. Project plans were produced to provide a familiar and reassuring narrative on the purpose, scope and confidentiality of the research in a form that would be very recognisable to those involved in project work (see Appendix 5). The approaches were made to project gatekeepers, often senior officers who, once supportive of the research, were able to identify and help persuade others to be involved. This snowball sampling inevitably contains an element of convenience sampling for the reasons mentioned in section 4.8. Thus, the two approaches cannot be divorced from one another.

However, both approaches have risks and benefits. Convenience sampling may mean that some groups are over-represented and others missed altogether, whilst ensuring that respondent involvement in maximised.

Snowball sampling can assist with respondent reluctance and possibly trust, as respondent involvement is through a referral by someone they know. However, the diversity of the sample may be limited as all of the respondents belong to the network of the referrer and the larger the group, the less chance a person has of being included. As the project team's activities are central to the research, the referrers –the gatekeepers of the snowball sampling – were encouraged to ensure that project access was granted. Through these negotiations, which took up to 18 months in one case, the risks of convenience sampling were countered by ensuring that all members of each project team (three in both cases) were interviewed as part of the research.

Table 7: Respondents by Case

Respondents Groups	Case 1	Case 2
Subject/Project Team	3	3
Community or Project Board	5	2
Total	8	5

In addition to the methodological challenges of a small sample, there are also theoretical challenges. These are addressed in the conclusion in Chapter 10.

4.11 **Risks and ethical considerations**

The wider ethical issues raised by this research are dealt with in turn using the four criteria identified by Berger and Patchners (1994), where particular attention needs to be paid to research ethics – namely informed consent, harm, confidentiality and deception.

4.11.1 Informed Consent

The insights provided by the research subjects, the project documentation and direct observations are likely to involve confidential or sensitive information. The subjects were given anonymity and the chance to challenge the narratives. Also, the purpose for which the information was being obtained was explained to the subjects in plain English prior to obtaining their explicit written consent (see Appendix 5). Access to written and other

codified information was obtained on a similar basis from a manager or other person with the competence and authority to grant this.

Before the start of the interview, respondents were asked if they were comfortable with the interview being recorded – this element of the research was identified within the participation consent form. Once the interview was complete, the transcripts were typed up and the participant's personal details were encoded in order to maintain anonymity.

4.11.2 Harm

Most respondent meetings took place in a typical office location for the convenience of the respondent and the need for a quiet and private area away from the respondent's workstation. It was reasonable to expect that health and safety checks had taken place, and therefore physical harm was highly unlikely.

In phrasing questions and observations, care was taken in the type of language used to avoid offence or asking any unnecessarily embarrassing questions. At the end of each interview, respondents were given the opportunity to comment on the questions to determine whether any potentially harmful issues had arisen.

4.11.3 Confidentiality

The interview respondents were informed that their confidentiality would be maintained. No explicit choice was given in order to minimise the possibility of any misunderstandings once the research is published, to ensure consistency and to reduce the possibility of error or deviation. All electronic communication was anonymised (e.g. replacement of the respondent's name with a code and the subject left blank).

4.11.4 Deception

Each respondent was informed in advance of the nature of the research and given the opportunity to refuse permission for their interviews to be used in the research. Whilst some elements of the transcripts might be embarrassing or distressing, the measures outlined above were designed to ensure that the identities of respondents were not made public.

4.11.5 Bias

Finally, people tend to construct an understanding of the world influenced by the social world in which they operate (Kuhlthau 1993). Researchers are also drawn to the metatheory that best matches the way their minds work (Bates 1989) and this study is no different. The researcher's experience of working in local government project teams may result in some preconceptions from which might arise the possibility of bias. However, the methods outlined above include keeping a record of the researcher's sampling and inductive coding throughout the research process in order to understand the perception of the researcher and the interpretation of the phenomena under investigation. The case study method is sometimes criticised for a perceived inherent bias. But the proximity of the researcher to the data and the participants enables a degree of interaction that would better enable bias to be identified, which is more difficult with large samples and some quantitative methods (Flyvbjerg 2006).

4.12 Conclusion

This chapter has presented the justification for the case study method as part of a mixed-mode approach using Constant Comparative Method and incorporating interviews, Repertory Grid Technique and document analysis. This approach seeks to go beyond what can be observed through a single method so that the data analysis can seek a better understanding of the observable underlying factors. This mixed-mode approach enables multiple perspectives to be considered from the same activity system, thus enabling the researcher to theorise from a rich descriptive base in order to provide explanations for complex, and under researched, social phenomena.

Chapter 5 - Case Study 1 Findings

5.1 Introduction

The case study method was used to explore project teams within two English local authorities. Chapters 5 and 6 set out the findings of case studies 1 and 2, respectively. The project teams chosen were responsible for managing public cultural projects, funded primarily by local government in the pursuit of their regeneration agendas. The observations were focussed on the concept stage, the point at which the tensions between different stakeholders and user needs are negotiated within the context of the wider corporate objectives and where strategy is translated into tactics (Archibald et al. 2012). It is also where the potential for influencing the outcome is at its most acute (Aaltonen et al. 2017).

Cultural Historical Activity Theory (CHAT), underpinned by Critical Realism, was used as the theoretical framework and as an analytical tool for the data analysis. This enabled the research to explore the activity systems within the project teams and their interaction with the wider project domain and its situational and contextual environment. A key element within the CHAT method is that activity is constantly evolving as a result of contradictions, tensions, and the systemic needs of the community and subject (Allen et al. 2011).

Exploration of these tensions and contradictions can provide a lens through which the development and change taking pace within the activity system can be understood, including the identification of hidden motives and activities (Engestrom 1987). Each activity system has multi-voicedness, multiple perspectives, interests and traditions that can be a source of transformation, and the system itself includes diverse histories (Engestrom 2008). History is important within CHAT as the precursor to the activity facilitate the understanding of problems – both current and emergent – as “parts of older phases of activities stay often embedded in them as they develop” (Kuutti 1996).

CHAT and Critical Realism was supported by a modified version of Kelly’s (1991) Repertory Grid Technique. This offered a method of identifying the motives of the project actors by contrasting organisational and personal worldviews and project ontologies to identify a potential source of tensions

and contradictions and to identify corroboration for hidden motive. It also provided a means of comparing the norms “as is” with the values “as should be” of the project domains and the personal, respectively. The activities identified in this chapter were selected based on the constant comparison method, using NVivo 10 to help elicit interesting and foundational constructs upon which the information behaviour of project teams can be better understood.

Both projects have a wider regeneration motive, where the intervention of the public authorities is necessary to encourage economic and cultural activity within areas where there is market failure or little or no interest by the private sector – hence a market choice ‘solution’ to the ambiguity is not available (Boyne 2002; Jałocha et al. 2014). The aim in both cases was the provision of public buildings to house cultural services which are not simply low-cost equivalents of private sector services but are reified activities which must have, at least ostensibly, a regard for equity and equality (Usherwood 1994). Both local authorities have a project management methodology based on PRINCE 2. All the respondents were aware of the guidance, through training and interaction with others. Further details of the particularities of each case are outlined in sections 4.5 and 4.6.

The first section of each case study sets out the history, social context and discourse through which the information behaviour takes place and then discusses the information behaviour itself through the lens of the activity system relevant to each case. A summary of the wider activity system is described in 5.10, followed by the conclusion.

5.2 History, social context and discourse

The Hub is the home of the library services (LB) and community services (CS) within the council. The ambition within the council is to transform the site and the services, particularly in the LB. But this aspiration has waxed and waned over many years [C1D13]. Indeed, the project has a legacy of starts extending over two decades which have failed to deliver “…in terms of a clear decision and moving (it) forward” [R101]. Previous investment programmes have focused on LB as a service, to the detriment of investment in the building itself and an objective options appraisal of the Hub as a council-wide asset. The asset is politically important, primarily due to its history and the community’s emotional attachment to the services within it.

Yet the current project is under-resourced and is failing to deliver clear and definitive options for, and with, the politicians. The council's physical strategy for developing the area where the building, called the Hub, is located makes no mention of it, suggesting that it has not been an option for redevelopment in the recent past. However, a recent change in political control and disagreements with public figures on the national political scene have brought the Hub's future into sharp relief. Further details of this conflict are not detailed here to maintain the anonymity of the respondents.

The history and political importance of the building is regarded as having positive and negative connotations. As the Director of Cultural Services put it [R108]:

> "The upside is that the history is such that I think there's got to be a solution found, a positive solution found; that's the upside, the downside is it creates also significant political public sensitivity and nervousness about getting it right, which perhaps is part of the reason for the inertia and over-cautiousness."

At the time of the case study interviews the council had, in the light of the budget cuts, begun a review of the future of LB's role in this and other buildings across the district. The resulting community consultation elicited hundreds of comments, several articles in the local press and a petition involving tens of thousands of signatures. The consultation process, which asked the public for their "ideas" to ensure the service they wanted and value for money, led to major changes to dozens of other smaller LB facilities across the district. This resulted in some paid staff being replaced by volunteers. Whilst this may have helped with the budget, it was not necessarily the outcome wanted by local people. This resulted in challenges from smaller political parties and pressure for intervention by the government who declined to intervene. However, for the building at the centre of the research narrative, the changes arising from the review were minimal and several years after the case study began its function and location remain unchanged, albeit new plans to look at the building again have recently been announced.

5.3 The Object

The first stage in the project manager's checklist is the development of a

project mandate, which is an essential component of any project whether it is regarded as low-, medium- or high-risk. All the respondents said that they were aware of the project guidance, although in practice its application varied [C1D8]. Despite the political uncertainty, a project mandate was agreed prior to the formation of the project team. This signalled that there was broad senior management and political support for the project objective, but little beyond that.

The project mandate uses a standard template identifying the project manager and the project sponsor together with the main outputs, whether building or service related (C1D5). The key risks identified by the project mandate were resourcing the project team, a lack of budget, the identification of key stakeholders and a lack of awareness of best practice of the main service concerned. The mandate also noted that the project was "… likely to be highly political."

5.4 The Community

The project domain includes both the project team, the "doers", and the project board, which provides the "strategic steer" (see Table 8). The project board consists of senior officers responsible for departments or key services within the council; these officers have legitimate power derived from their respective positions within the organisation. The project board has overall responsibility for delivering the project and for assigning resources to it. It provides the primary interface between the political and the officer branches of the authority and is able to approve actions and change the strategic focus of the project team's activities.

Table 8: Case 1 Subjects & Community

The Project Team Sarah [**R101**] The project manager; Adam [**R104**] Head of Libraries (LB) and Nancy [**R105**] Head of Communities (CS)
The Wider Project Domain The Council - headed by the chief executive supported by several Executive Directors, including Graham [**R107**], the Executive Director of People and

Communities.

Steven [**R103**] - Assets Director, responsible for managing and investing in the council's properties. Gillian - Programme Manager is responsible for project assurance. [**R102**]. Frank - Projects Director [**R106**] - is the head of projects and Sarah's line manager. Peter - Director of Culture [**R108**] is responsible for libraries and line manager of Adam.

Executive Councillors – have cabinet level responsibility for the council's services. They provide a political steer for services and projects.

The Hub – the building where LB and CS are located

Service CS - Community service (in the People & Communities Department)

Service LB - Library service (in the Culture Department)

The community needs and views, as represented through the documentary analysis (e.g. media reports and petition) are captured in the narrative pertaining to this chapter.

The politically sensitive nature of the project means that there is a substantial senior officer presence within the project domain, in both the team and board because "it's very highly, highly political [LB] as you're probably well aware" [R107]. This was seen as an advantage due to the senior staff's knowledge of the context.

> "Yeah, I think it's an advantage; it's an advantage in the sense that the quality of work that you'd expect from them but also the fact that they would understand the political and policy context in which they're working" [R108].

This has complicated the project manager/project domain relationships by making them more hierarchical than is usual. There is an expectation that senior officers will be able to instruct their way to a successful project and the fact that it is not going well is not fully understood, as the sponsor [R107] illustrated:

> "…it would be interesting from a behavioural science point of view where you can communicate, you can put things in writing, you can verbally

> explain things and you're still puzzled as to why things don't get done. And you think, well, it's not a communication issue because you've had it in two, at least two different formats, both in a common parlance and a council-speak news or in English or whatever else."

The increased authority and the perceived knowledge of organisational norms brought by these officers is offset by the information overload arising from working in an environment where there is "incredible pressure on the system". Whilst the project sponsor's reference and legitimate power is seen as important in getting senior staff to attend the project board, he has limited time to attend to it outside of the meetings.

> "…so, I think because he's more distant, what I see happening is that he goes off and spends 99 per cent of his time doing all the other strategic stuff that he's doing and then he sees in his diary that he's got a project board meeting and he drops into project board" [R102].

Although the programme manager challenged the sponsor outside of the project board meetings on his role and the need to allow more space for the senior managers to determine the progress of the project, this was not successful. This, combined with the time constraints on him and other board members, leads to some project information being ignored.

> "What [R101] does is she takes in a report from the libraries side, the culture side and the property side and combines that into a single report. So it's a multi-stream report but the problem is it gets submitted to the board, no one reads it. You try and highlight key the issues and suddenly you're out of time, it gets very frustrating sometimes" [R106].

The decision to avoid the information may be contextual and situational, as the Culture Director [R108] suggests, or may arise from the inability to align it to the information values of those within the project board. As a result, the project board's role as a resource provider is undermined by its own information overload in the face of declining resources and local politics which are sensitive to reputational damage. As the Director of Culture noted:

> "In local government, it's very difficult to say no and to de-prioritise things… the smaller stuff [is] regarded still as politically important and people want, members, politicians want [it] sorting., As I said, the consequences are that forward-looking projects, certainly those that aren't

> presenting a crisis, tend to get de-prioritised" [R108].

This process of systemic de-prioritisation is in tension with the totemic value of the building, and the services it houses, within the local political establishment and the wider community. As such, there are competing versions of what should be done with the building. "The official version is it's in hand, there has been a political steer that it should stay on that site irrespective of the work that's done" [R106]. This official version of the political information need undermines the object of the rational option evaluation role of information seeking within project management and leads to ambiguity between the role of the project board and that of the project team.

However, within the project orientated staff [R101, R103 & R106], whose current or previous roles were primarily project based, there is a belief that an information solution to these tensions exists. The managers concerned [R103 & R106] preference information trust over ease of access. Although this is not directly observable, when these values combine with the resources and authority available to them it leads to information seeking and the creation of networks outside the board which are developed as alternative information structures. They believe that unearthing this solution will reconcile the aspirational but controversial move of LB away from the Hub, with the benefits superseding the reputationally safer, but less inspired, pressure to stay. This suggests a belief in real underlying processes which, although difficult to observe directly, interact with information they can access and reveal to politicians to reconcile the tensions between socio-political and technical spheres. In this context it is worth noting that a steer can be provided by senior politicians or senior officers. A political decision can only be made by politicians.

> "Others believe that [the decision is] fixed but this comes down to politics really. I think if the information's presented in the right way, if it was to say something else… we'd have to do a report that just sets out an officer recommendation as to the best value way of proceeding and then it becomes a proper political decision, rather than just a steer" [R106].

There is ambiguity in the position of the project board as the officers working in the cultural service were resigned to a decision to retain the LB within the building, although it was not their preference. Given the history of failed

projects, they and the project sponsor want certainty: “I’m quite relaxed with what their decision is, I just need a decision” [R107]. This feeling is partly borne out of an exasperation with the process and an unwillingness to invest political capital in changing the debate in the current climate.

> “The reality is everybody’s trying to be proactive as the situation has to be managed and prioritised but I think it does feel a bit like a hurricane coming and you can’t evacuate” [R108].

Although there is a defined project team consisting of the three respondents interviewed as part of this process, it is clear that the boundaries between the team and the project board are blurred and do not represent the clean separation envisaged by project method. Critically, members of the board believe that project method is not fit for purpose for dealing with the early stage of the project whilst the realpolitik is still in flux.

> “Project team, I’m trying to think, do we really have a project team? …I’m not sure there is yet a project team because the project is still waiting to be – in concept terms – to be clearly defined and nailed down for us then to be able to give a brief to a project team” [R108].

But the project manager sees the project team as having status and a role: “There are representatives from various areas of work across the council that are coming into this one project team so we can make sure it’s all joined up” [R101]. However, the view of the sponsor [R107] and the Assets Director [R103], who reflected on an earlier role where he made sure that “[he] knew exactly what was what before going into that more public political arena …before we started to put in place too much of the structure around project board and project team” is more circumspect.

5.5 The Subject (Project Team)

The subject of the CHAT system is the group whose viewpoint is adopted during analysis (Murphy and Rodriguez-Manzanares 2008). The primary viewpoint used in this analysis emerges from the project team. At the concept stage the project team consists of Sarah, the specialist project manager [R101] along with Adam [R104] and Nancy [R105], who are responsible for LB and CS, respectively. The project team’s primary task is to collect and interpret information that will help to establish priorities for the

repair, refurbishment or replacement of the building. At this stage the team's focus is primarily concerned with actions as opposed to decisions, typical of the theory of the temporary organisation (Lundin and Söderholm 1995).

The project team consists of three people who were unknown to each other before the project. A pen portrait of each of the respondents is provided below which highlights their relationships, priorities and information tools used to project their information behaviour. When referring to the bi-polar results, the first number in brackets represents the respondent's values and the second the respondent's perception of the project domain norms.

Sarah is the project manager [R101]. The main story emerging from Sarah's narrative is the extent to which a role can be found for "technical objective" information in a climate where a "lot of people are very emotionally attached to the building". This was a major project for her, given the political sensitivities around it. As such, she is especially concerned to reward her line manager's trust by providing tangible and concrete information to ground the project, whilst acknowledging that the political considerations may take sway in the final analysis. Her contribution to the provision of technical and objective information is dictated by her ability to unearth and process information of value to the board. Her capacity to cope with the political environment is determined by her ability to distance herself from it through the formalities of the project management method and the board members, who include her line manager [R106].

She has a strong preference for individual over collective responsibility (43, 28), experience over systems (38, 7). But there is also a recognition that power should emanate from position over experience (38, -12). Despite her use of relationship-building to act as an enabler for refining further information searches, the greatest value/norm divergence is seen by her preference for the "iron triangle" – a hard project paradigm which preferences hard outputs over relationships – (44, -42) perhaps reflecting the need to achieve something in the face of past failures and to live up to the trust placed in her to manage this challenging project. Of these four strongly held value preferences, only her values on responsibility and experience were perceived as being practised within the project domain and, even then, this was to a lesser degree than she would have liked. Only three other norms match her values. This includes support for professional uniformity over diversity (-32, -42), project team being distant rather than close (-21, -28),

divergent values over shared ones (-34, -42) and she has a balanced view of the importance of certainty over uncertainty (1, -4).

The latter suggests that she feels that her coping mechanisms for dealing with uncertainty, seeking advice from an experienced colleagues or maintaining a good audit trail of information, are sufficient (du Preez and Meyer 2016). This openness to dealing with uncertainty represents her peripatetic role in information seeking, given her status as the non-specialist within the team. Although familiar with project method, the services LB and CS and the political issues are new and require embracing new stories, experiences and information stores in order to expand her understanding of the issues affecting the project.

Question	Sarah Should be	Sarah As it is
Position vs Experience	38	-12
Autonomy vs Control	25	-41
Individual vs Collective	43	28
Diversity vs Uniformity	-32	-42
Milestones vs Relationships	27	-30
Self selecting vs Imposed	9	-17
Uncertainty vs Certainty	1	-4
Short term vs Long term	34	-22
Experience vs Systems	38	7
Implicit vs. Explicit	7	4
Iron Triangle vs Stakeholder	44	-42
Trust vs Ease of access	-3	14
Close vs Distant	-21	-28
Shared values vs Divergent Value	-34	-42

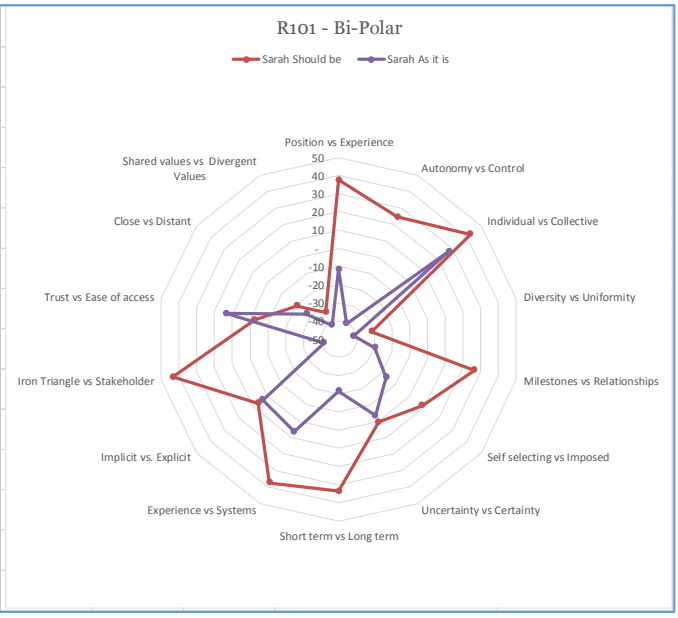


Figure 5-1: Bi-Polar Sarah [R101]

Adam [R104] is the acting Head of LB and works within the Hub. His involvement goes back to a previous iteration of the project when, in 2009, he was involved in exploring funding and partnership options for its use. Adam also undertook self-directed preparatory work during this hiatus to "rise above the uncertainty and frustration" by engaging in information refining activities that tested earlier assumptions regarding user needs within the building, new or refurbished. However, during this project the extent of his initiating actions were limited to satisficing the general project reporting need. Adam exhibits this behaviour by seeking to foster connections outside the project domain to reconcile the big picture project with the multiplicity of user interests within the current building, whilst

aligning the work streams within his own service for when the key project decisions are undertaken “to set the whole project assail”. Like Sarah, he uses distancing to avoid the uncertainty posed by the clash of objective and political information, in his case by tackling issues and working within spheres where he has control and where neither the political nor the project dynamics are dominant or immediate.

Adam, like Sarah, has a strong preference for position over experience (40, 35) and the individual over the collective (40, 21). There is also a preference for short-term over long-term milestones (38, 25) and the benefits of experienced staff over information systems (41, 13). Adam has had previous involvement in the project and is keen to make progress; this, perhaps, explains the near-term milestone preference. As the most experienced member of the project domain and having considerable experience of briefings with the council’s cabinet, he also strongly believes that implicit information should be regarded as more important than explicit information (40, 27). Also, he clearly thinks that trustworthy information should trump ease of access (33, 40). As a manager, he has the authority to instruct others to produce information for him – therefore ease of access is less important, unlike Sarah who is not a line manager and who believes they should be equally important. Trustworthy information, however, is likely to be critical in his role as a decision maker. These considerations likely reinforce his personal approach to relationship building and trust, even at the expense of blunting the importance he has expressed for milestones (-32, -6). Seven of the 14 constructs match Adam’s values with the norms of the project domain (highlighted in Figure 5-2), perhaps reflecting the relative power of the business-as-usual operations and their influence on the organisation’s norms.

Question	Adam 'Should be'	Adam 'As it is'
Position vs Experience	40	35
Autonomy vs Control	-4	12
Individual vs Collective	40	21
Diversity vs Uniformity	-30	26
Milestones vs Relationships	-32	-6
Self selecting vs Imposed	-4	39
Uncertainty vs Certainty	-3	39
Short term vs Long term	38	-25
Experience vs Systems	41	13
Implicit vs. Explicit	40	27
Iron Triangle vs Stakeholder	-4	27
Trust vs Ease of access	33	40
Close vs Distant	-5	42
Shared values vs Divergent Value	8	18

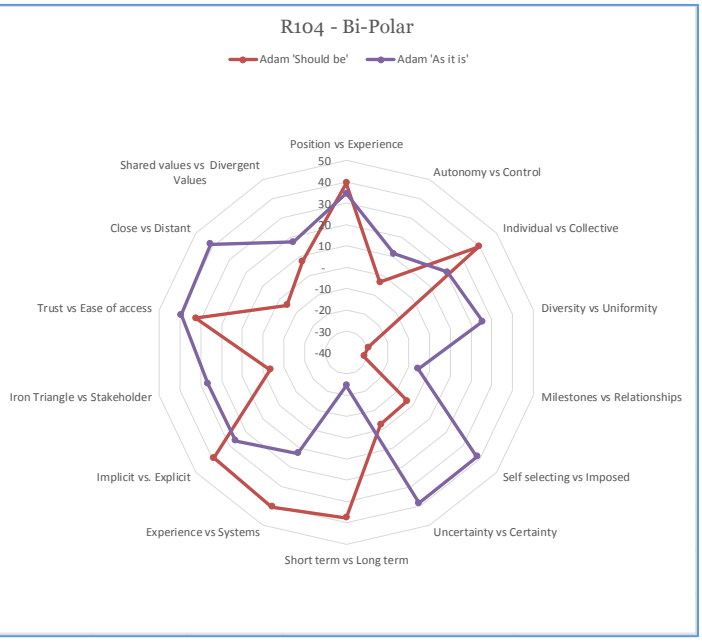


Figure 5-2: Bi-Polar Adam [R104]

Nancy [R105] is the Head of Service CS. Her main challenge is to ensure that the project outcome has a very strong identity and that her service area "has a stronger presence within the new building". Unlike Adam, she believes that a new building is the best way to secure these objectives. Her service is less closely associated with the Hub, allowing a greater sense of detachment from it. She believes that delivering projects in local government has its own dynamic, in particular, the political context that shapes the consultation process. The central driver for her information behaviour is the need to foster connections outside the council in order to ensure that the alignment of stakeholder interests supports both the local and strategic cultural aspirations for the Hub project.

The deviation between perceived domain norms and personal values is less distinct for Nancy than other team members; she shares 8 of 14 constructs with the project domain norms. She has a strong preference for uniformity over diversity (-38, -41), perhaps reflecting the narrow information seeking role within the team, and a heightened level of trust amongst people from similar professional backgrounds. The strength of feeling for her other preferences was less but she clearly supported values that reflect a preference for the individual over the collective (31, 21), certainty over uncertainty (-26, 1) and stakeholder relationships over the iron triangle (31, 5).

This closer alignment of norms and values reflects her greater readiness to

accept the status quo and not to challenge the formal position of the ruling political group. This is in line with a greater acceptance from the senior managers overseeing their services to accept the formal political position. Representing the less well known public service within the Hub means that she is playing a secondary role to LS, emphasising the need for some certainty and more influence over the options selection process going forward.

Question	Nancy 'Should be'	Nancy 'As it is'
Position vs Experience	15	-15
Autonomy vs Control	3	25
Individual vs Collective	31	21
Diversity vs Uniformity	-38	-41
Milestones vs Relationships	-4	-38
Self selecting vs Imposed	10	35
Uncertainty vs Certainty	-26	1
Short term vs Long term	15	-10
Experience vs Systems	15	36
Implicit vs. Explicit	23	35
Iron Triangle vs Stakeholder	31	5
Trust vs Ease of access	-25	-16
Close vs Distant	-1	-4
Shared values vs Divergent Value	-16	-29

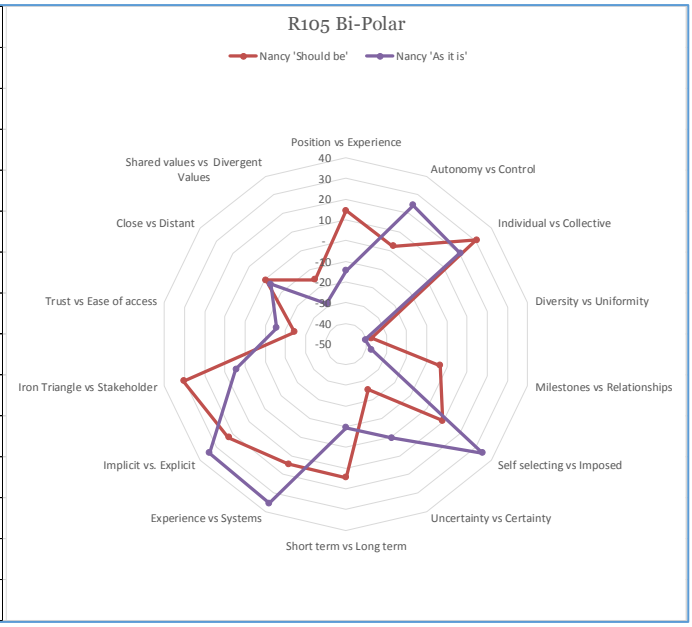


Figure 5-3: Bi-Polar Nancy [R105]

Some have argued that the establishment of the project team was premature and driven by the need to be seen to be taking the project seriously, given the effect on information norms and values arising from the actual or perceived views of politicians. Other tensions arising from this conflict meant highlight reports, which focus on progress risk and forthcoming issues, remained unread. Information was also retrofitted to suit the prevailing political viewpoint to enable audit trail evidencing.

The lack of social presence of the project team at board meetings (only the project manager attended occasionally) may have exacerbated the situation by limiting the benefits of trust and consciousness of other perspectives when using personal information channels in the exchange of information (Case et al. 2005; Perez 2015). This was reinforced by the bi-polar survey and interviews, which confirmed that decisions were based primarily on experience and perception. This is partly because a systematic collection and analysis of information on some issues is likely to challenge the public

political steer. As a result, some reports were "…more based on a gut feeling of the politicians as to what they wanted and where" [R101].

5.6 **Rules, Norms & Values**

The links between organisations, their values and leadership have significant impact on the effectiveness of organisation (Edwards and Turnbull 2013), the team and members' satisfaction (Doolen et al. 2003), as well as its development (Schein 2004). This section highlights the personal vs project domain norms and values, as framed by the bi-polar survey.

The bi-polar questions (see Appendix 3) showed significant shared values in how the domain ought to prioritise and values that may affect how projects and teams work. However, none of the personal values shared by the board were perceived by all respondents as being practised as part of the domain norms. The project team did perceive norms and value alignment in preference for the individual over the collective and for experience over systems. However, within the project domain as a whole there was low norms and value alignment.

Both the project team and board shared the view that position was more important than experience, the individual more important than the collective and short-term more important than long-term in achieving a successful project. The preferencing of position may be linked to the role of professions in identifying similar norms within organisations (Pinto 2014). In terms of progressing the project, a number of respondents cited the lack of, or need for, a leader to initiate and then progress the project. This may have been the thinking behind the unusually high level of senior officer appointments to the project domain. The call for better leadership, near term milestones and seeking a plethora of senior officers to dominate the project domain could be seen as seeking simple solutions to a complex problem, ignoring or avoiding the fundamental macro-political tensions that have stymied progress.

> "There's all sorts of views about whether it should stay here or whether it should be linked to part of a wider retail development … because of the lack of clear leadership, including political leadership, we're still kicking around although I think we're coming to the end of it but we are still kicking around the first key decision, which is shall we stay put?" [R108].

Within the project team and board there was also agreement that professional uniformity was good for the project, perhaps reflecting a greater reliance on domain knowledge and insiders to overcome the tensions between the socio-political and technical domains, as suggested by the Head of Libraries [R104]. Interestingly, whilst the project orientated members of the board initiated looking for knowledge people outside the project domain, selecting participants from outside their departments, those chosen were from similar professions such as planning and surveying, rather than from LB or CS.

The project team's preference for decisions experience over the systematic collection and analysis of information also agreed with the values of the project board. Whilst a systematic approach is the ideal within normative project and professional guidance, this not necessarily reflected in the engagement in the overtly political realm, which is more likely to be experienced by board members. This preference for what might be termed a soft project paradigm by most of the project team and board is also reflected in its preference for implied information over that which is explicit. Again, this was perhaps as a result of experience and closer proximity to the socio-political sphere given the seniority of the respondents and reflected the ambiguity toward the relevance of project method at this stage of the process. Despite this social view of information, the board preferenced control over autonomy. In contrast, the project team only expressed a slight preference for autonomy, with both service orientated members [R104 & R105] preferring a balance between autonomy and control.

When norms and values across the whole project domain were considered, there was little discernible consensus between personal values and the norms practiced in the project domain, except in one of the 14 constructs. The exception was that the achievement of project objectives should depend mainly on the actions of individuals (as it should be); this was borne out by their experiences of the norms across the project domain (as is). Whilst this could relate to a lack of leadership, the privileging of personal responsibility may point to a deeply held belief in self-efficacy and the faith in the individuals concerned within the project domain, if not the structures which frame it.

This may suggest a tension between self-efficacy and the source of the structural problems facing the project, over which they have limited

influence. This is supported by the finding that the project team and project board believed that power should come from position or profession rather than experience or capability. But, in general, both groups recognised that this was not the case in practice, reinforcing perhaps some of the criticism of political influence over the independence of the officer branch of the council.

In terms of the project and political norms and values, the project sponsor (and project board chair) recognised this distinction between the project and political processes, but felt powerless to change the rules which underpinned the council's adoption of project method so early in the process: "You have to work out… what the city needs and that isn't a project management process" [R107]. Secondly, the project was created prematurely. It did not meet the normative criteria for being defined as a project. However, the political imperative to get something done brought the project into existence before the goals were agreed. This tension between the object, rules and the political community who supported the principle of the project method but simultaneously sought to challenge its application, resulted in an ambiguity that was difficult to reconcile without the project actors being able to directly influence their context or to wait for change within it to occur. Their response was thus limited to the facets of the project domain within their control, which in turn reflected their use of strategic information behaviour.

Without the tools to understand the norms and values divergence within the domain, but knowing enough to understand their importance, the project board assumed that seniority equalled an understanding of the norms of the organisation. This was clearly not the case, leading the sponsor to weigh up whether he had the right people on the team and to question, unfairly, their motivation: "Some people understand better than others the bigger picture of what we're trying to do and some people are more motivated than others" [R107]. This trial and error approach to norms and value alignment was a recipe for inaction, whilst ignoring the underlying contradiction which inhibited the creation of an effective collaborative information process.

5.7 Tools

Within CHAT, tools are forms of mental processes manifested in constructs, whether physical or psychological (Fjeld 2002). As a tool there is no dogmatic attachment to project method in case 1; its role is understated by the respondents. However, it does provide the framework for many

information exchanges, e.g. meetings, situational definition (e.g. project manager and sponsor roles) and for the codified reports (e.g. monthly highlight reports) prepared by the team and presented to the board.

Information need identification is done by consensus, based on the board or team view of the task need. At this stage, the project is in a state of "flux" so the need is not necessarily a reflection of some tangible physical entity; like other stages of the project process, it is based on "what feels right":

> "It may well be asked of us amongst ourselves or it may well be something that the board ask us to do, like a highlight report, which they do, so there is a consensus that we a) would either need to do it or b) the project team sees there is a need to do it" [R104].

Although more senior to the project manager in terms of heirarchy, the other project team members see themselves as, "working to the project manager. This reflects her role as the primary conduit for project related information and her knowledge of the project methodology. Notwithinstanding this communication route, briefings between board members and R104 and R105 are also provided via their line managers, who attend the board. This is through regular one-to-one briefings which also cover a wide variety of other topics. Options are also discussed between R104 and R105 and other section Heads in LB and CS, respectively. Some information is clear and trusted based on previous discussions, suggesting a collective approach to information validation, whilst new situations involve the next best trusted source, cultural service specialists within similar authorities:

> "… some of it is quite clear-cut though and some of it is also based on knowledge taken from other library authorities where they have the same issue" [R104].

Knowledge from other authorities is gained from the internet, followed by sites visits, suggesting that face-to-face communication, in situations where new knowledge is vital, is privileged. These site visits are the only situation evidenced where the project team all attend, and therefore receive the same information at the same time. Also, the use of internet as a device to survey the information landscape, before specific sources are selected for follow up by R104, is the reverse of the information seeking of the project manager. Indeed, most information seeking is done singularly by the project team member with the best alignment between their domain knowledge and that

of the information source.

> "…that meeting would sit down, and say 'right then that's an action for that person to go and investigate that you've got expertise in that area. Can you find some information out?'. So, that was the heart of the project – when people went out with their feelers and their particular areas of expertise to go away and report back information." [R101]

In the case of the project manager [R101], she finds much of her information from a list of project alumni whom she convinces the new project is worth their time to help inform the current process, before using that knowledge to refine further information seeking for codified information. This may be a reflection of the project manager's preference for achieving milestones (27, -30) and finding something tangible for the project to deliver against. She knows that finding that crucial piece of information could break the deadlock and as codified information it is less likely to be dismissed as subjective or baggage-laden by the board. In seeking to reflect the prevailing political view to keep both services at the Hub, the emphasis of [R104] and [R105] is more focussed on looking for ways of making that decision work, and seeking new knowledge to assist that process. This led the Project Director [R106] to characterise those within LB and CS as those whose "solution was to get a famous architect to tell them what the vision should be". In contrast the project manager sought information that was highly situationally dependent in order to lessen the charge of incompatability as she looked for information to break the deadlock between the technical and political domains.

5.7.1 The Knowledge People

There is a recognition that the building will continue to "get de-prioritised" until there may be a crisis, in which case something would have to be done" [R108]. In the absence of dramatic events that would enable a reconciliation of the structural issues faced by the project, the team must work within a domain where it has influence. The more uncertainty within the project, the more project-orientated actors persisted in the search for information that could break the deadlock by "going back and finding the knowledge people" [R101]. This suggests the self-efficacy factor is very apparent in seeking an alternative viewpoint, unfettered by the need to deliver the LB and CS services during the project. These project orientated officers are also more distant from the politicians responsible for LB and CS and, therefore,

perhaps less restricted by the concerns of reputational damage should news of any radical change to LB and its presence within the Hub become an issue.

The history of repeated failure of similar projects involving LB led some with past involvement to wonder why this time was any different [C1D6]. Where there was resistance to this information sharing, the project manager was happy to emphasise the "big political push" driving the project to counter the "'why will this time be any different?'" concern of some project alumni. Thus, whilst recognising the potency of political behaviours, this was also used to create spaces where actors sought to identify "objective information".

Information place-making was important in finding places of exchange with others in an environment where tensions were mitigated. As such, information seeking took place with people in their own environment where they were comfortable and had immediate access to the information they were referring to during the meetings with the project manager. This face-to-face contact also helps to "spark interest" and build relationships, albeit taking place at some distance from the project board.

The need to put information in context is also reflected in the setting in which the exchange took place. From the point of view of the seeker "it's important to get a feel for what the building is like, how it's used, the people that use it so that's like absorbing information when you go out to meetings there" [R101]. The setting is also important for those providing information:

> "I think it is because they're more comfortable in their own environment and if you're asking them for information they can say, 'Oh yes I might have got that in a file'. Whereas if they come away from their workplace they've not got that information to refer, to have they?" [R101].

Nevertheless, this information exchange enabled the development of project solutions that challenged the prevailing political dynamic, forcing what the project manager perceived as a suboptimal outcome, albeit one that was not always revealed.

5.7.2 Collaborative Information Seeking

Information seeking is not carried out in isolation; each project team member has a line manager, who also sits on the board. They also have other roles and responsibilities which impinge on their time. These determine

their prioritisation, the depth and nature of their engagement with the process. The challenge involves many dimensions: the physical state of the building, the potential uses within it, the interests and prioritisation of other stakeholders, within and external to the council.

To avoid duplication, the team has chosen to divide the process of seeking information, ensuring that specialists within the project team focus on information seeking linked to their area of expertise or experience: “So I think it’s finding the right person to make that link with the stakeholders” [R101].

Each member provides, through a regular highlight report, “workstream” updates to the board. However, these activities are continually having to reconcile the veracity of the technical and objective information with that of the political drivers apparent to this project and within the wider culture of the council.

Information seeking is not collaborative. Each individual member of the project team undertakes information seeking based on their specialist knowledge. This is supported by the bi-polar survey, where all team members agree that in terms of collaboration the individual should be more important than the collective and believe that this statement is true across the project domain as a whole.

Given the limited range of domains affecting the project, this sometimes involves seeking knowledge from previous acquaintances, for example Relationship Managers at the Art Council. In this case, the Head of Communities [R105] tests project options with the Relationship Manager, who uses her knowledge of previous bids and the policy environment within the Arts Council to provide guidance on the likelihood of a successful bid. At this stage of the project the information exchange is done through face-to-face exchanges to guage the commitment to a particular course of action: “The relationship manager conversation is much more about taking the temperature, you can do that more one-to-one” [R105]. For the project manager, the information seeking occurred via face-to-face discussions, which in turn informed the highlight reports. These discussions were also regarded as range finders in order to help refine further information seeking or information production to avoid previous situations where the team had, “laboriously ploughed through lots of historical [information] (laughs)”

[R101].

Within the project domain, building personal relationships were more important than acheiving project milestones. Whilst the bi-polar survey suggests there was some ambigutity over whether this should be the case, this is probably more to do with the importance of milestones from which to judge progress. This appears to be related to the information that can be revealed through personal contact, which is likely to be more helpful than information secured remotely and which lacks the ability to empathise and to gain the trust of the information provider. As the project manager put it, face to face communication provided the,

> "opportunity to just have a chat and a discussion about things and then that kind of sparked something in your imagination that you know if you just phoned up or dropped an email and said can you give me an answer to question 'x' we would never of had that discussion and it wouldn't have been as rounded a document" [R101].

Notwithstanding this approach to opening up the project domain to previously unknown but potentially useful information, the role of the project team is to re-combine all the information pooled for that period. This was to get everyone to "the same level of understanding" [R104] across the different information sources accessed by the project team as not everyone would experience it in the same way.

This stage is important as it validates and freezes the state of knowledge at a particular time so that it can be shared with the board to reflect an unambiguious position. These validation processes are there to help engender trust and to provide an initial area of search for new information,

> " because that was a starting point that could be you know relied upon. I mean if you sit down and meet with people they might have got a different recollection of the facts, but to have a written source was a good starting point to base it on some factual information" [R101].

Thus codified information played a reinforcing role in producing reliabile information for decision making.

5.7.3 Information Use

Decision-making about key stages is top down – as the decision-making on

whether to undertake a feasibility study on the library facility illustrated:

> "It isn't actually a decision for the project team to take at all, it's a decision that's being taken by members (politicans) and Assets and some [directors] and I would have thought would need to be ratified by the board before that can be undertaken…" [R104].

Before formal decisions are made, informal member views are sought to provide a political steer, in particular from cabinet members. Where meetings are arranged to get a steer, this is preeded by the "work [that] had gone on between officers and between officers and members beforehand to try and make sure that that meeting reached a viewpoint" [R104]. The optics of the political reality and the information processes fostered by project can result in tensions. Politically, there is a need for the organisation to come to a view, whilst being mindful of the role that project discipline plays in tying the organisation to its explicity communicated best practice:

> "This morning we've set up a meeting of two or three key officers to take a paper to our executive management team and then to the Cabinet members, not a public report to Cabinet but political discussion [paper] because quite recently the current Cabinet members have given us a clear indication that they want a library and they want it on this site" [R108].

This paper, it is hoped by the service-orientated leaders, will formalise the decision to retain the library and to close the debate down on this point as some feel that the board has been "indulging ourselves about there might be a better site" [R108]. It was acknowledged that this was "pragmatic policy and politics", implying that there could be a need to post hoc "retro-wire that political process against a project management process".

5.7.4 Alternative Information Structures

Some senior officers who challenged this dominant political viewpoint used their autonomy (delegated powers) and their financial and referent powers to create alternate information spaces.

> "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 [business-as-usual] people but I will bring that back in towards the end of the month because again I think this is classic" [R103].

The uncertainty and lack of guidance from the project board provides significant scope for intuition but the "upside is in the absence of detailed guidance; they could come back to the board with a whole range of stuff and be very proactive and very imaginative" [R108]. The project orientated officers have used this absence of leadership, ambiguity and some existing networks to create space for an "intelligent discussion around, well, actually is that the most viable solution, is something else a better way forward?" [R103]. This application of instrumental rationality emerges in part from their history outside the services involved and the need to address structural weaknesses in the organisation.

> "[The council] I think still suffers a little bit from that separation of asset management, planning and capital programme requirements and delivery [and the] main challenge [of] actually trying to get council colleagues, from a very wide spectrum, thinking more strategically on how we deliver this thing right" [R103].

This feeds into the notion that it is more than a building project designed to house cultural uses into debate about the value of the wider regeneration benefits to the organisation and wider community: "It's like getting tuned on to what we can do through this project, not just for the library and the city but all the benefits that radiate from this one project" [R101]. But this activity is not designed to usurp existing structures, not permanently in any case. It is also recognises that this process can also be retrofitted to the realpolitik by providing an audit trail of options analysis, even if the final decision is a political one: "If that's still knocked back then at least there's an audit trail in terms of a decision-making process and robust project management." [R106]

Creating a new forum for information exchange outside of the project and normative structures is to produce space for new interactions and exchanges unfettered by the political baggage in another forum:

> "I think it will be in another forum. One thing I'm trying to do is work with [R103] and [R108] behind the scenes so I'm meeting them quite a bit outside the project board to try and get them thinking in the right way and get the work done behind the scenes to move the project forward" [R106].

These spaces enable those within the hard project paradigm, which preferences deductive reasoning and objective information to:

- protect rational information from political forces that might compromise it – the discussions involved people external to the council in some cases who were not fettered by the political baggage of those within it
- work with like-minded people – for example, project managers, surveyors and planners
- co-construct information structures with an external facilitator: "But even if it's facilitated possibly it might need that sort of external facilitation because one could argue and I'd be happy to be challenged over it – to avoid the charge of having an agenda' [R106].
- when the primary project domain does not enable it – it allows unfettered information generation and exchange
- provide a space for analysis, then persuasion, before re-joining the formal project structure – project board members were later invited to discuss the new information constructed.

5.8 Division of Labour

In terms of the main roles within the project domain, Figure 5-4 illustrates the relative seniority of the respondents, their number and where they sit.

1 x Executive Director / Project Sponsor [R107] B 2 x Directors [R108] Culture and [R103] Assets B 1 x Project Director [R106] B 2 x Head of Service [R104] Libraries & [R105] Arts T 1 x Programme Manager [R102] B 1 x Project Manager [R101] T	Most Senior  Least Senior
Membership – (B) Project Board / (T) Project Team	

Figure 5-4: Case 1 Hierarchies

The extent to which information from the project team is adopted or even read by the project board is variable as the personal values of board members affects how this information is received and used. The project board contains senior officers who understand the political environment but

whose time is constrained. As such, their information behaviour is transmitted through the actions of others, either through direction or more likely setting the environment within which project actors can make heuristic and value enabled decisions which are safely within the limits set.

Yet the value transmission is seen as being limited by the hierarchies involved in the project domain, which are relatively senior for this type of project. Limited direction means those outside the board have room for initiative but a lack of guidance could lead to information seeking that is outside the parameters and values that are intrinsic to the board's approach. In seeking to mould the communication behaviour of managers as "quasi leaders" who need to understand "…their behaviour and … their vision and drive, the alignment of project values is an important determinant of the empowerment of project teams" (Tuuli and Rowlinson 2010, p.190). This is reinforced by leadership at team level as they provide a conduit for organisational practices and policies (Greasley et al. 2008).

As such, senior managers' involvement in information seeking behaviour is either indirect through others or political and subjective. Despite this, project actors have their professional and personal drivers and cannot be relied upon to act in ways that those in authority believe appropriate, resulting in the sponsor's frustration that people cannot just follow instructions and get on and "do things."

5.9 Trust

Linked to the conflicting hierarchies, there was also lack of trust in the ability of the project team to deliver at this stage of the project. The lack of trust stemmed from many perspectives, but primarily from senior officers and from the inherent weakness in applying project processes to the stage in the development where the primary information problem is centred on political choices. In essence, the informational value of the project team lacked problem solving abilities, resulting in diminished trust and role inversion, with the board undertaking some of these activities instead.

> "There isn't that separation of powers as it were between the board and the team, or there is but it's too early in my own opinion, in terms of trying to get the project to work. It's too early to try and have that separation when, to be honest, it's the skills and the influence and the

> knowledge of some of the board members who are going to make the thing work" [R103].

Trust has been associated with information sharing in many studies (Butler 1999; Rowley et al. 2014; Huvila 2017). However, Marsh & Dibben have argued that the "trust resides not in the organization, but in an agent within the organization", such as a superior (Marsh & Dibben, 2003, p. 473). Thus, a lack of trust by a senior officer in a leadership role may undermine information sharing should that lack of trust become apparent. As a result, the relative seniority of the project domain has the effect of dampening the influence of the project manager, who was the most junior person involved in the project. The project board members lack confidence in the project team to deliver the project as they did not have the capacity to use their "toolkit to steer what they need out of project board members" [R106]. Other managers also privilege people over process, suggesting that having particular cognitive attributes is important when attempting to deliver a project in difficult environments:

> "Ultimately if it is a continual problem, you reconfigure your team… Do I reconfigure a couple of positions and try and get a little bit of a spark? But there is a risk that you may let a goal in, you know, and I think that's how you should look at teams… saying just cos you've put them together doesn't mean it's a fixed thing for the rest of the duration of a project" [R107].

The fact that reports were left unread suggests that the sponsor's expectation of a solution arising from the project team is limited, with greater reliance placed on self-efficacy and intuition. This is doubly damaging to the effectiveness of the project team as the expectation of trust is central to both information sharing and for developing a climate of trust (Butler 1999).

History and the lack of previous progress also affects trust as people with competing priorities choose to opt for alternative work areas. The voluntary nature of the information provider emphasises the need to motivate others to get involved in the project, which although important is ambiguous politically and is one of a number of competing priorities for the council:

> "What'll happen, you see, is people get involved then they get fed up with it because it's not going anywhere, so then they go off and do something else; it just falls because there's no resource on it. I've seen that time and

> time again with a number of different projects where there's just a massive shift in direction because people have lost interest because of lack of progress" [R106].

5.10 Activity System Analysed

This section analyses the activity within the project domain through the lens of CHAT. The lack of a unified vision (Figure 5-5: A3) from within the council did not allow the project team to "come into its own" and have "something to deliver against" in the face of a multi-voiced project board (Figure 5-5: A4) and wider uncertain political environment (Figure 5-5: A Context). In this environment, rational decisions about the validity of information were contradicted by a wider political narrative which preferred risk-aversion and the outward appearance of unity, which in turn limited the overt consideration of alternative options for the building. This tension between political information values (Figure 5-5: A3) and project method (Figure 5-5: A1) led to uncertainty about the relevance of the project team, who were seen as "invisible" by some project board members:

> "[The project team] are very much steered by the directors that are on the board who they report into and are actually doing a lot of the work at the moment cos it's at that more senior political buy-in sort of level, rather than 'the this is what it's going to be, this is what it's going to look like level'" [R106].

The project board lacked sufficient trust in the project team so its role as a tool and source of rational information to inform the direction was taken over by the project board, rather than coming from the expert power of the team (Figure 5-5: B1). Tensions were also apparent between the lack of clarity over the vision (Figure 5-5: B3), project method (Figure 5-5: B2) and the premature establishment of the project team (Figure 5-5: B1). This lack of more objective information limits informational power, the ability to influence or bring about change through an information resource.

This political information culture within the parent (Figure 5-5: B2) caused tensions within the project organisation as project actors sought to counterbalance and retain the objectivity called for by project method. There was a recognition that what the project needed at this stage was "not a project management process" [R107] and that whilst "that's what we do

corporately… the key to unlocking [the project management process] is getting this first stage right and in terms of defining what we're actually trying to do" [R106]. This position is exacerbated by a lack of clarity and transparency in the political aims (Figure 5-5: B3) and by service managers who are time-poor (Figure 5-5: B4), leading to information avoidance and mismatch between the information needs of the board and that produced by the team.

Due to the political importance of the project and the need to achieve a shared vision for it, the project board was filled with senior officers (mainly directors who are the most senior person in their service area) with significant formal authority (Figure 5-5: C1). The assumption was they would understand the political dynamic within the council. Yet this did not necessarily translate into managing and reconciling conflict.

For the project board, the decision about who led the project was seen as a "massive issue". A lot of people wanted to get their names against it and tended to "throw their rank" around to deal with conflicts. However, each of them had business-as-usual activities to manage too, thus providing little time to personally steer the project (Figure 5-5: C2). The project sponsor who was the most senior officer did not want to let go of the project given its importance to the council and politicians, despite his time constraints. Although the authority of the sponsor's business-as usual-role was not questioned, his perceived inimical engagement in the project was only countered outside of formal project board meetings (Figure 5-5: C1), providing space for face-saving and maintaining his authority amongst his peers.

The hierarchical nature of the project domain also led to other tensions which restricted information which was central to the project from being shared with those managing at more junior levels, including the project manager (Figure 5-5: C3). Motivated perhaps by the scalar distance been the hierarchies, those with legitimate power restricted access to sensitive political information. This caused tensions between the project team and project board (Figure 5-5: C1), which directly impacted on the ability of the project manager to do her job:

> "Somebody on that project board knows a little bit more about politically what's on the horizon or opportunities that might be coming on the

horizon which they can't outright come out and say…" [R101].

As a result of these situational tensions and a lack of norms and value alignment, project actors sought other routes for self-actualisation in the form of information spheres based on temporary alliances and enacted through strategic information behaviour (see chapter 8).

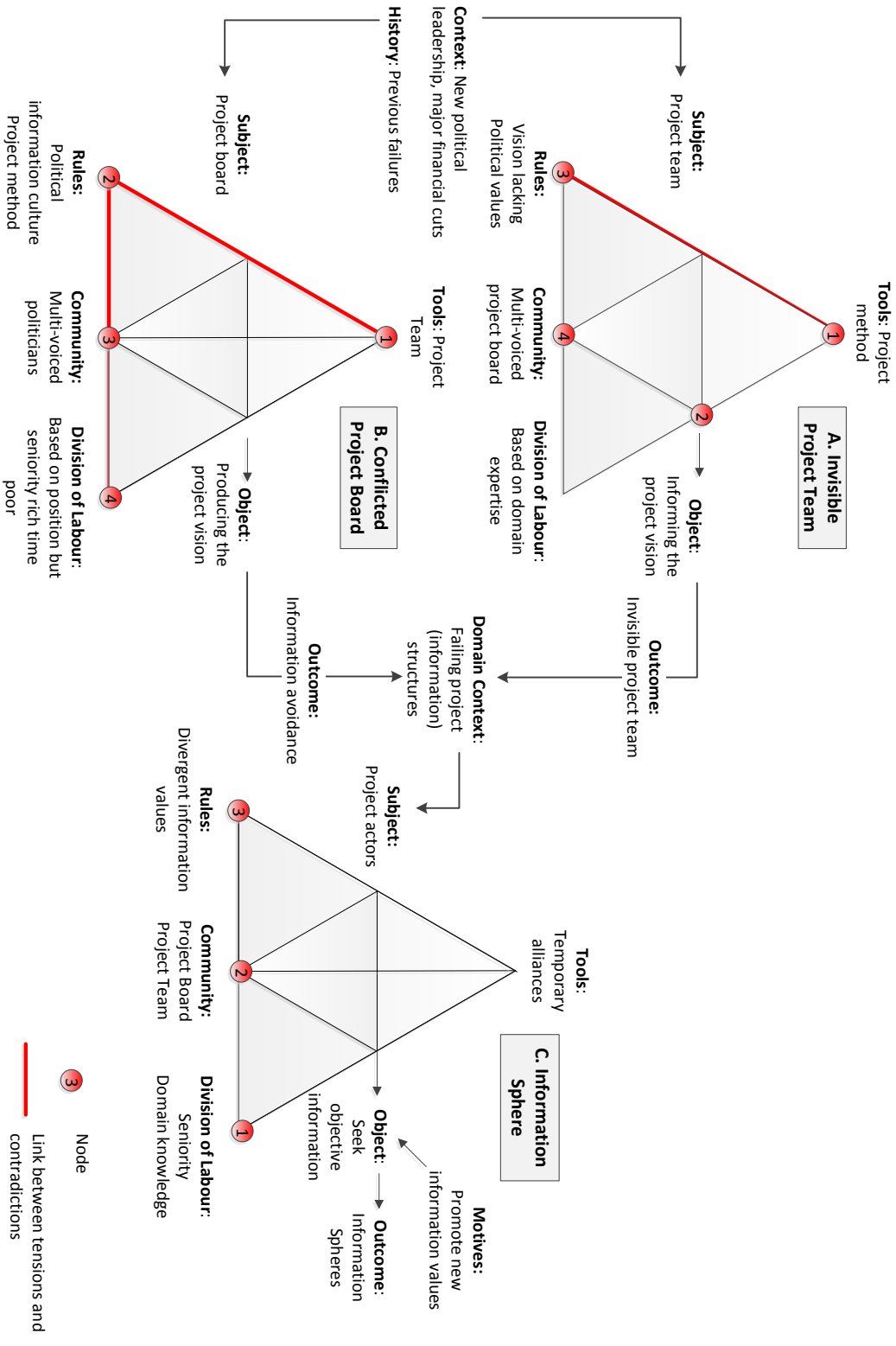


Figure 5-5: Case 1 Activity System

5.11 Conclusion

This chapter presented the findings of the case 1 activity system. Political

activities, both macro and micro, created contradictions and tensions that the normative project information structures have struggled to address. The values of the technical sphere were in tension with the dominant socio-political sphere, leading to the development of alternative information structures to protect the values of the project orientated staff.

The main structural tension was between the inability to finance major repairs to a politically important building and enable the current uses to remain and the lack of political will to look at wider and potentially more viable options, including moving the LB and CS services to another building. The financial barriers to the former and the reputational risks for the latter have undermined the formal project communications structures. As the informational power of the project team could not overcome this contradiction, its role became side-lined. The project board, some of whom have avoided information from the project team, also agreed to its establishment. Whilst this may have given the politicians a sense of progress and purpose, it only served to mask the underlying contradiction.

To compound matters, there is only limited value and norms alignment in case 1, leading to competition between the project team and project board, undermining the expert information providing role of the former. A unified approach has also eluded the project domain, in part due to mistrust arising from the premature use of the project method during a period of intense realpolitik.

In the meantime, actors with strong self-efficacy values made their own communications networks in a space outside of the formal structures in order to find a solution based on instrumental reality. The approach was designed to make sense of ineffective codified norms – from the project methodology to the council plan – that profess collaboration and partnership working but which lacked the understanding of norms and values alignment, flexible structures and a willingness to provide political leadership.

Chapter 6 - Case Study 2 Findings

6.1 Introduction

In case 2, the project was developed in a stable party-political context. Unlike case 1, the council also had a network of codified strategies which set out the broad regeneration and cultural policy framework within which the project was set. Within this framework the council aimed to build a new cultural facility, in the midst of a wider, privately owned development site (Grange Place) whose value was to benefit from the footfall arising from the two renowned artistic organisations who would be rehoused in the new facility. These organisations were a publicly owned theatre and a third sector based arts centre. The overall project was overseen by a joint venture board (JV) jointly chaired by the Leader of the council and the chief executive of the main developers, TCC.

6.2 History, social context and discourse

Despite the Grange Project only getting final approval from the council's Executive Board in 2011, discussions between the council and TCC had begun in 2000, with a view to securing the regeneration of Grange Place. The initial attempts to achieve the regeneration of Grange Place failed. In the early 2000's the future accommodation needs of the two cultural facilities were being pursued independently of the regeneration of Grange Place and their accommodation needs were apparent but less pressing. However, there was an awareness within the council that a solution would be needed at some point, leading to several temporary fixes being found for the council-owned theatre. In part this demonstrated a failure to reconcile, spatially, the differing objectives of the key players within the activity system, namely:

- The council's regeneration objective to create jobs
- The theatre's need to retain a service with deep roots in the local area
- The expansion needs of the arts collective
- The developer's need to make the scheme profitable and minimise risk

Whilst the operations and objects within each of these activity systems are location specific, the potential outcomes had significant opportunities for

complementarity that were overlooked until the Chief Executive had a "eureka" moment: "Hang on a minute, we could put these two pieces of work together" [R202]. This could point to inadequate information systems, a lack of object definition or other interferences that prevented an early identification of this coincidence of interest (Brown 1974).

The failures within the activity system involving these wider cultural assets prior to the case study helped to reshape the object and division of labour. As a result, the council recognised the need for someone to have oversight of both capital and cultural projects. This was achieved by transferring Lucy [R202], from a purely cultural role, into a new hybrid position to provide "more capacity" for the management of cultural projects whilst maintaining an oversight of the cultural services delivered by the council. This response contrasts with case 1, where senior managers lacked the time to provide effective authority to untangle the multi-voiced project domain (community) and to influence contradiction between the socio-political and project spheres.

6.3 **Project Context**

The council has a well-established PRINCE 2-based project methodology which has been adopted by other members of the Local Government Association, a body established in part for sharing good practice between councils. The method also has a substantial project information system based on the principle that information can be pulled from the system by even the most IT-skeptical senior manager. The council is not a project organisation and therefore its project method is used to "stitch" projects together to ensure that it works across service boundaries and to promote co-operation to overcome the spatial separation between teams and their information.

The project team's focus was the development of the Grange Project. The aim of the project was to develop a new cultural centre, the Grange Arts Collective (GAC), to accommodate the Redline Theatre (RT) and the Bardle Arts Centre (BAC). The new centre was to be located within an area known as Grange Place as part of a much wider regeneration scheme, which includes land owned by the council and a private developer, TCC Developments (TCC). A schedule of the main project domain actors is shown in Table 9.

Table 9: Case 2 Subjects and Community

The Project Team Lucy [**R202**] Head of Cultural Services; Geoff [**R201**] Head of Projects; Den [**R203**] Consultant project manager working for council
The Wider Project Domain The Council is headed by the leader of the ruling political group who also jointly chairs the JV board. The deputy chief executive chairs the project board and is Lucy's line manager. Cultural Services (CS) - The council service with responsibility for cultural services, outreach and strategy development. Headed by Lucy [R202]. Projects Development Service (PDS) - The council service with responsibility for developing capital projects. Headed by Geoff [R201]. This service also includes Peter [**R204**] who is a senior project officer and Donald [**R205**] who is the author of the council's project method. Major Projects Ltd. (MPL) - The consultancy that employs the consultant project manager, Den [R203]. TCC Developers (TCC) - Site owner and developer of the new accommodation for the Grange Arts Collective and the Theatre Company, which is to be called the 'Grange Place'. TCC's chief executive jointly chairs the JV company with the council Leader. The Redline Theatre (RT) - Publicly owned theatre company based in temporary accommodation. The Bardle Arts Centre (BAC) - charitable organisation responsible for providing gallery, learning and film space with ancillary leisure facilities. Based in the 'Artist House' for several years. The Grange Arts Collective (GAC) - the name of the merged theatre (RT) and arts centre (BAC) which took place after the project commenced. Headed by Paul. Grange Place - The name of the wider development site owned by the council and TCC, which includes the new home for The Grange Arts Collective. The community needs and views, as represented through the documentary

analysis (e.g. media and social) are captured in the narrative pertaining to this chapter.

6.4 The Subject (Project Team)

At concept stage the team consisted of three officers. Geoff [R201] and Lucy [R202] were asked to become involved in the project by the council's chief executive. Geoff is the director of the projects division who had worked for the council for 30 years and Lucy, the of cultural services had been in post nine years. The third member, Den [R203], is the private consultant who was chosen via a procurement process overseen by Geoff and informed by Lucy. Den acted as client project manager. In addition, the project team also attended the project board; whether they were actually members, or only attendees of the board is disputed, with Lucy believing the former and Geoff, when pressed, the latter.

Members of the project team had "different (areas of) expertise" and this guided the "clear distinction of (their) different roles" within the team and beyond. Geoff's primary role was to sign off changes to the programme or scheme costs. Den was the project manager acting on behalf of the main client, the council, and Lucy was the main contact with the user groups, the Arts Council and on any council staffing issues. Lucy leads the project team and utilises Den's project management knowledge in a supporting capacity.

Notwithstanding this, there is a high social presence between the project team and the project board – meaning that there is direct opportunity for values to be created, shared and defined with the sanction of senior officers. This means that the project manager and other members of the team can interact with the project hierarchy on the level above (the board) and below them (the user group and design team), providing an important vantage point from which to influence the project.

Geoff [R201] sees the values of the council being one of bringing services together to create new opportunities and the council's project method as a manifestation of that approach. Geoff also acknowledged the leadership provided by the CEO and his deputy, which he feels has provided the necessary stimulus and clarity to ensure that the project is a genuine collaboration involving the whole council.

Question	Geoff Should be	Geoff As it is
Position vs Experience	2	-17
Autonomy vs Control	25	25
Individual vs Collective	-21	-34
Diversity vs Uniformity	14	33
Milestones vs Relationships	18	34
Self selecting vs Imposed	6	-10
Uncertainty vs Certainty	-15	-32
Short term vs Long term	-21	-34
Experience vs Systems	1	17
Implicit vs. Explicit	-27	-16
Iron Triangle vs Stakeholder	3	3
Trust vs Ease of access	4	21
Close vs Distant	31	19
Shared values vs Divergent Value	41	41

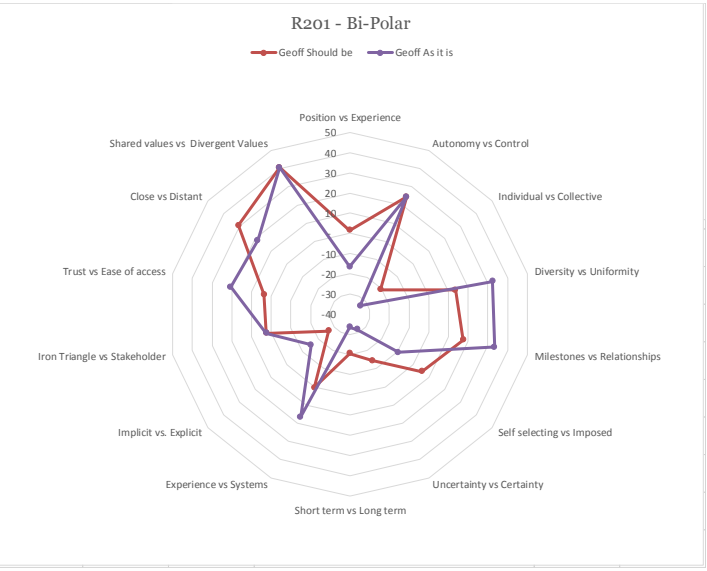


Figure 6-1: Bi-Polar Geoff [R201]

Geoff believes that there ought to be a balance of traditional project drivers' time, quality and costs and stakeholder needs (3, 3). He also prefers team autonomy (25, 25), collective responsibility (-21, -34) and shared values (41, 41). With the benefit of his long tenure within the council, he has also acknowledged the primacy of implicit over explicit knowledge (-27, -16). This may be related to his current seniority and the political influences over the project domain, with the Grange project being one of two highest profile council projects at the time of the interviews. Despite this, he also acknowledges that the council values long-term (21, -34) project objectives more than he does, perhaps reflecting the stable political control that has existed over many decades. Whilst there are no major splits between his values and domain norms, he also feels that power ought to relate to position and experiences equally (2, -17), whereas experience has more relevance to domain norms. He also feels that the team should be more self-selecting than imposed (6, -10). These preferences may reflect some minor tensions with the project manager [R202], as both see themselves as managing Den [R203], who for his part see's Lucy as his manager. Given his seniority and decision-making role, Geoff's also believes that too much emphasis is placed on information which is easy to access (-4, 21) rather than information which is trusted.

Lucy [R202] is the Head of Culture. She has been seconded to the Project Division in order to focus on the project. She describes her main role as the "capital feasibility work leading up to a project, stakeholder engagement and then getting the project off and up and running". She has prior knowledge of

the theatre and, in particular, the Bardle Arts Centre's chief executive. There is a modest misalignment between her values and those of the wider project team on some issues. This is marked by her emphasis on authority over autonomy, perhaps reflecting the way she "...manage(s) it" and the fact that her line manager chairs the project board. Her claim to manage the project manager, which is disputed by Geoff, and her insistence on having a client project manager role despite the council's methodology reflects her preference for a controlled project environment (-32, -32), in stark contrast to that of the other team members Geoff (25, 25) and Den (-3, -3). This perhaps reflects her role as project manager with seniority and extensive domain knowledge and may explain her rather equivocal view on whether the team should have shared values (2, 5).

The other significant value difference relates to her strong preference for uniform professional backgrounds (-43, -42). On the other hand, Geoff's (14, 33), and in particular Den's (44, 44) preference for significantly more diversity perhaps reflects their project management background where the project team, and in particular the design team, needs a variety of skills to get the task completed.

Question	Lucy 'Should be'	Lucy 'As it is'
Position vs Experience	-32	-32
Autonomy vs Control	-32	-32
Individual vs Collective	-48	-37
Diversity vs Uniformity	-43	-42
Milestones vs Relationships	24	5
Self selecting vs Imposed	-16	-17
Uncertainty vs Certainty	1	13
Short term vs Long term	2	17
Experience vs Systems	3	27
Implicit vs. Explicit	-31	-21
Iron Triangle vs Stakeholder	6	19
Trust vs Ease of access	4	20
Close vs Distant	5	6
Shared values vs Divergent Va	2	5

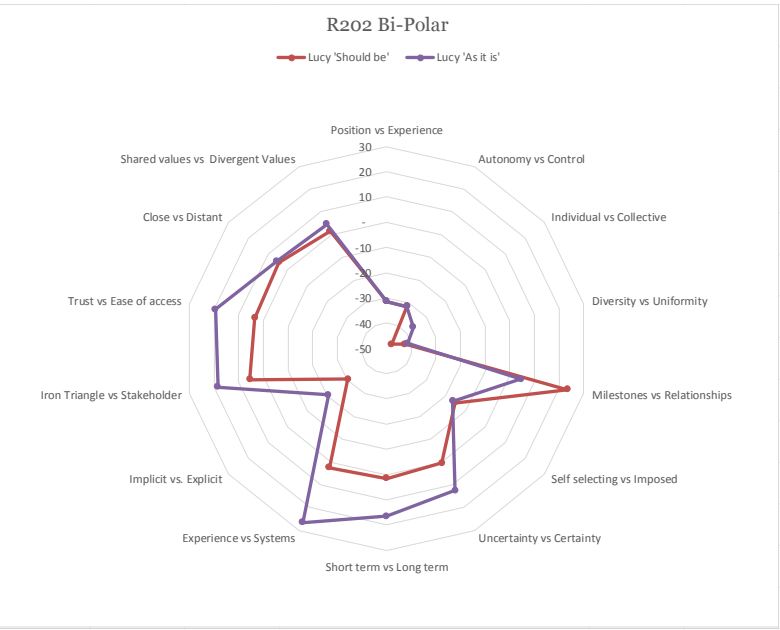


Figure 6-2: Bi-Polar Lucy [R202]

Den [R201] is a project management consultant employed by the council to act as the client-side project manager, who describes his role as "independent project manager, on behalf of the... council". Despite his title he is in a technical support role to Lucy, who acts as project manager, but

with some of the authority of the sponsor. In this particular challenge he must construct a conceptual interface that identifies and articulates a fit between the council's method of getting best value through partnerships and the private sector's adversarial approach to avoid the risk that "they're gonna rip you off". Given his role in aligning contractor values with those of the council, it is perhaps unsurprising that his values and those of the team are more aligned than any other team member. Despite this, and his seven-year tenure as a consultant employed by the council, it is perhaps worth speculating whether some of the response is due to him being an outsider wanting and needing, for commercial reasons, to fit in with the prevailing culture. This is perhaps reflected in Den's view that the values of the project domain should be more divergent (-16, 22). As an outsider he can also encourage the development of new ideas and information without being constrained by them:

> "I suppose my job is partly to bring realism to it, you know; let the ideas come and be developed but also keep an idea on cost and on programme and make sure we're achieving what we set out to do" [R203].

Question	Den 'Should be'	Den 'As it is'
Position vs Experience	-28	-17
Autonomy vs Control	-3	-3
Individual vs Collective	-38	-28
Diversity vs Uniformity	44	44
Milestones vs Relationships	37	37
Self selecting vs Imposed	-33	-34
Uncertainty vs Certainty	-29	-5
Short term vs Long term	-27	-27
Experience vs Systems	1	1
Implicit vs. Explicit	-2	-2
Iron Triangle vs Stakeholder	24	24
Trust vs Ease of access	5	5
Close vs Distant	39	30
Shared values vs Divergent Va	-16	22

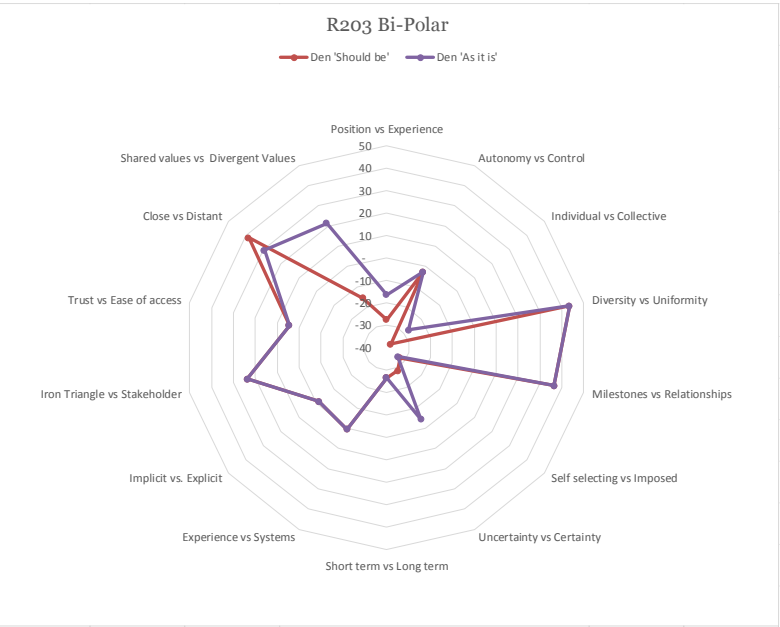


Figure 6-3: Bi-Polar Den [R203]

6.5 Rules Norms and Values

However, the other team members feel more comfortable with the alignment between their values and the norms within the domain. Despite their base

values being different, with Geoff (41,41) and Lucy (2, 5) there is a preference for shared values, perhaps helping to explain the need for Den to act as gatekeeper for other private sector consultants and contractors. This difference between current and desired states may reflect their relative power within the organisation as long-standing senior employees, in contrast to Den's role as a consultant. Nevertheless, it does raise the question why all three members of the project team do not agree on these values, despite broad convergence on a range of other value indicators. The answer probably reflects the influence of other parties within the wider project domain and the differing roles and interfaces of each member, especially Den's, which involves working directly with the design team contractors and his experiences within other, mainly private sector, organisations. The complex value set within project domains is challenging because:

> "The fact that there are so many parties involved is the biggest challenge…[and] when you take what you had at the beginning of the project – which is two sets of values that you had to bring together in order to create the new arts organisation" [R201].

There was a clear project value structure based on partnership and a philosophical communitarian approach, which considers the absence of fundamental disagreement as a necessary condition for the creation of in-group strategies and narratives (Fraser 1999). When applied to problem identification, solving and information sharing, this helps to foster an awareness of strong in-group characteristics (Freelon 2010). These shared values are important and were demonstrated by Den, the client project manager, describing his role as promoting shared norms amongst the other private sector consultants and contractors:

> "I know how they work and actually they know I'd sort of bring [the contractor] up-to-speed in terms of how [the council] works in terms of that partnership approach; the way you negotiate your contract is very different to a competitive environment" [R203].

6.5.1. Collaborative Information Behaviour

The paperwork produced regularly by the project team for the board is prepared by Den using a common format. Lucy reports on stakeholder, Arts Council and revenue funding issues and Geoff reports on procurement, finance and construction matters. This provides a combination of domain

specialism and social prescience not evident in case 1. The project uses the standard project management approach applied across the Council, albeit that the design team consultants have their own document management systems. Members of the design team also attend the board and submit their own reports. Importantly, the two users (RT and BAC) also have the opportunity to directly inform the project board, "another important part of the reporting to the Project Board is we always have a report from the end users" [R202]. Apart from being able to be involved in a dialogue and have formal representation from the users, this was important

> "…because alongside a building project you've got an evolving organisation which is also developing its product… So, it's important that we see the two twin parts of the project always" [R202].

Reports on programme, risk and other key issues were standard, but the agenda also allows for the unusual. Informal information exchange on non-standard topics is agreed by the team and board together before each meeting, according to Lucy:

> "We decide at each meeting what the special agenda item will be for the next meeting and then we present whatever it is, whether it's visuals or whatever, and then people can have a good chat around the subject or whatever" [R202].

In order to refine the client's brief and to test ideas with the users, it is important that the fidelity of the communications between the project and design teams is high. This requirement also stemmed from the council's "one team" approach. So, whilst distance is not a problem for sharing maps via extranet, for discussions you need face time – hence the requirement for a [local] presence. "…There was a big emphasis that if you worked on this project you had to be willing to be in [the town] to work on it because that's where the rest of the team were" [R203]. Extranets and other network solutions were useful for sharing maps and other pieces of information but "as good as video-conferencing and everything else is, it's not the same as having someone sat, you know, you can pop in round the table" [R203].

However, whilst the design team were good at putting ideas forward, the architects and theatre designers were based abroad. The architect eventually took up offices with the structural engineers to ensure a local presence. However, the theatre designers' location in continental Europe made matters

difficult although it is unclear whether that was primarily down to distance or because of the different national approaches to designing cultural venues. Whilst social presence was important, the role of the design team and the technical fidelity of the available information technology prevented it from being essential.

However, face-to-face communication can provide richer information than ICT based communication, which lacks social context cues and social information about the group (Lira et al. 2007). As such, the end user's communication was less technology focussed; as Geoff noted "very few stakeholders can read 2D" [R201]. In terms of the end users, the challenge is to "…test what we were doing with the guys who would be, in effect, using the building… rather than designing a building that we thought they wanted" [R203]. The main interchange for these discussions are the "user group meetings" led by Lucy [R202] where ideas, aspirations and needs are tested, challenged and refined in order to provide a clear commissioning narrative for the design team. Den's notes and recollections were then used to guide the design team.

6.6 **Community**

The community involves all the actors involved in the activity system. In addition to the project team, this also includes those within the wider project domain (see Table 9). This array of interests and values was the main challenge for the project team. In addition to the informational needs of developing a capital project, this recognition meant that they were aware of a parallel project involving the transformation of the theatres and the arts centre organisations during the normative project. Information is prepared by these end users in a project template to allow the project team to monitor, anticipate and adapt any business-as-usual needs with the interface of the capital project as it is "so it's important that we see the twin parts of the project always" [R202].22.

The outcome of the engagement includes creating the environment for trust and familiarity to be created. Therefore, before the new facility at Grange Place was built, the staff from the Redline Theatre moved into the then home of the Bardle Arts Centre. The council's approach towards creating this familiarity and shared values involves a significant degree of trust in general and amongst specific individuals within the project domain as it

> "instils in its projects the willingness to work in a very, very open manner with its contractors and designers and everything else is a massive plus…When people actually realise that it is the way we work and the way that [the council] work, then I think it massively helps because everybody feels like they are part of it, they're listened to" [R203].

This environment was not seen as a typical council-contract relationship by Den [R203]. "The Project Board will happily share their thoughts and views; there's no, there's no sort of 'us and them' really." Generalised trust within a group encourages strangers to "collaborate leading to collective actions", whilst personalised trust is an evaluation of the trustworthiness of people we know (Farzan 2010, p.1). Both perspectives on trust helped to shape the information behaviour narrative within this case. Whilst all three members of the project team had not all worked together, there was evidence of trust propagation from the Project Director [R101] to the Head of Culture & PM [R202], from the Head of Culture & PM [R202] to the Consultant PM [R203] and by transitivity from the Project Director [R201] to the Consultant PM [R203] (Jøsang et al. 2006).

One example of the generalised trust was a collective approach risk analysis. Prior to the project getting formal sanction from the JV board, Lucy organised a half-day workshop with the council, user and developer stakeholders to identify barriers to the progression of the project. "I invited, not just the, the key individuals involved from each organisation but people like, someone from the Treasuries Department in the Council…" [R202]. Treasuries Department are usually consulted last or forgotten about until the issue becomes urgent, along with the additional risks and pressures this brings.

This approach supports Reddy and Jansen's (2008) assertion that information seeking is as much about producing new knowledge as it is about finding existing information. It is predicated on creating a "one-team mentality" (Geoff) approach to the project, but more so on identifying problems and information needs early. This piece of "risk analysis [took place] very early… [and identified] the key pieces of work that we might need to do" [R202]. This multi-voicedness opens up opportunities for creative solutions and synergies, which increase the capacity of the project domain to find and solve problems:

> "So, what you've got is, is, is a jigsaw, a jigsaw in funding, a jigsaw in building, a jigsaw in terms of different, lots of different organisations coming together to produce something that is greater than the sum of the parts" [R201].

This 'open mic' approach to information seeking was supplemented by more pointed questions which concerned the critical information needed in order to correctly specify the project and to reconcile the needs of "competing" stakeholders, Redline Theatre and the Bardle Arts Centre. This information need identification was driven as much by the requirement to align the motives and values of the stakeholders as it was to identify their future intentions for the use of the building. As Lucy noted, "what sort of organisation are we, where do we want to go? Because until they've done that, I couldn't rush forward to writing a brief for a building because it wouldn't have been right" [R202].

6.7 **The Object**

The object of the activity system is to create a set of shared project objectives, which manifests itself as project specification which is both realistic and affordable. Therefore, the main challenges for the project are to manage the budget and the expectations of those with an interest in the project. Whilst the cultural uses have important stakeholder bases this was about

> "designing to a budget, rather than just designing an ambitious scheme that people would then cost and realise that we couldn't afford. So, managing expectations and making sure that there was a real deliverable project at the end of the day and not just letting it run away" [R203].

Particular attention is paid to the cultural organisations, Redline Theatre (RT) and the Bardle Arts Centre (BAC). Although less powerful than the council, both organisations have an effective veto on the project, or at least the potential to cause reputational damage arising from conflicts that might become public. For several reasons communication and framing the project goals is complex, in part "…because the client, the ultimate user, is often someone who's never had any responsibility, experience of a capital project" [R202].

The project also requires access to extant information and the creation and

use of new information. Much of this information lies outside the project team and the timely and effective participation of others will rely on goodwill. From experience, the council has determined that the more effective approach to securing synergy is through a partnership approach, where through socialization, interaction, or negotiation, actors can develop common and shared frames interest (Ovaska et al. 2005).

The council's attempts to create these shared values is evident in a number of instances, shaped by the actions of project team members. By making a political and financial commitment to the project (C2D9), the council creates an additional reputational risk for the politicians associated with the project. In seeking to minimise this risk and to promote collaborative information behaviour, the workshop and co-opting of contractors seeks to create a coincidence of interest that the project method relies on but which it does not articulate.

However, this tension within the object is not resolved solely by shared interests and values. Creating a united vision has financial implications. As a result, there is a tension created between the "blue-sky thinking" which encourages users to solve problems and the costs that this freedom could highlight. This tension was articulated by Den [R203], who remarked:

> "I suppose my job is partly to bring, sort of realism to it, you know; let the ideas come and be developed but also keep an idea on cost and on programme and make sure we're achieving what we set out to do."

Most of the integration with the users was through user group meetings where the client project manager [D203] sought to ensure that every step was agreed by the user:

> "Every decision was tested with them. We didn't just [come up] with a design and say, right, 'There's your design, have you got any thoughts on that?' once it was all done and them say, 'Oh, that's not what we wanted'."

Despite written briefs where the user needs were interpreted by council officers, it was important to ensure that the problem information, information needs and analysis were aligned to ensure the correct instructions were communicated to the design team:

> "We had briefs and what have you for the project but then there's always a

> bit of… huge refinement and making them a bit clearer. When you test something you might think, 'Well actually, that's not quite what we wanted so…' So, it's mainly… a lot of our job was about trying to draw out and instruct the design team exactly what it was that we wanted and most of that was through discussions and workshops and just testing different ideas" [R203].

The tensions between the council's communitarian values, which regard social identity as being indivisible from community values (Etzioni 2014), and its budgetary constraints was a key challenge. There is not an obvious mechanism to resolve this within an organisation faced with significant budgetary challenges and the need to make good the promise of a transformational building. Therefore, it was perhaps not surprising that the solution was found external to the project domain. Eventually, two years after the initial costs were agreed, an additional £5m was added to the budget, funded in part by the Arts Council. Conflicting interests between the two users were eventually reconciled by the RT and BAC being merged into a single organisation, the Grange Arts Collective. As a result, the new chief executive, who was also on the project board, was able to mediate these tensions outside the project domain.

It should be said that the communitarian values observed had their limits. The extent to which they can be sustained in the light of different value sets between the public and the private sector are, in a wider context, limited by the financial risks that TCC are prepared to take. These risks are constrained by the paramount importance placed on shareholder capitalism and the limited scope that councils have for militating against this (McCann 2017). Hence the addition funding being sourced from the public sector, despite the footfall, vitality and viability benefits the GAC will bring to TCC's adjacent commercial development. This tension, between the community and the object in the wider macro-political, also promotes the need to problem solve and promote collaboration and understanding of the council's position before disagreements lead to additional political and financial challenges for the council. In return for accepting these limitations, the Redline Theatre (RT) and the Bardle Arts Centre (BAC) are insulated from the developer (TCC) by public funding and from the private contractors by value alignment, project processes and the hope value attached to future contracts.

6.8 **Division of Labour**

Within the council's project method, the role of the board is to be "responsible for providing approvals and decisions that affect project progress and delivery" (C2D3 2007). Despite the formalities of the project method and the hierarchy of its governance, in practice much of the analysis leading to decision-making occurs within the project team, which also embodies some of the powers and authority of the project board. The information gained from written and face–to-face reporting from the design team and user groups enables the project team to undertake considerable pre-approval work before projects are presented to the board.

The contradiction between partnership and budgetary control also has implications for the project hierarchy as the project transitions between stages and as the organisation re-aligns itself to provide a more coherent link between the end users and the capital investment. As the project progresses beyond the initial decision on the choice of location, the importance of cultural users becomes more apparent and Lucy's role grows without Geoff fully accepting it. This is reflected in a difference of opinion in terms of who manages Den. Both Geoff and Lucy claim to manage Den, albeit Geoff is less equivocal saying that he "sort of, in effect" manages him.

Indeed, the fact that both council respondents saw themselves as the client project manager's manager may be a reflection of the complex evolutionary route that public projects can take when a number of services have, or need, to be involved. Given the transition needed between the vision, the politics, the design and construction, there is a need for information to be managed by specialists at different points during the project (Kerosuo et al. unpublished). This reflects the information seeking specialist role identified within case 1, meaning that the project manager, or project leadership function, is likely to be passed between several people, even if this transition is not fully recognised by the participants.

This contradiction is resolved through the working of the project team. Both Geoff and Lucy were asked to join the project team by the Chief Executive and there is significant trust in their abilities. As a result, they are both able to exercise significant authority over the project. For Geoff, [R201] this initiative takes place within what he sees as the paramount consideration

> "…within the parameters of the Council's funding constraints, then R202 and myself had a lot of delegated authority to work up proposals for consideration, both by the Project Board and the private sector joint venture board".

Beyond this, there is the suggestion that Lucy [R202] has additional authority: "There are a lot of decisions taken at the Project Team level, led by Lucy [R202] really, cos Lucy's got a lot of authority to basically make decisions" [R203]. Some of the decisions that might otherwise be taken by the board are taken by Lucy in agreement with Geoff [R201] as "…it's more taking those decisions up to the Project Board for basically approval, you know what I mean. So, it sort of works that the decision's made, it's sort of signed off then at the Project Board" [R203].

This decision-making within the Project Team is generally consensual. This removes ambiguity for the client project manager and provides a locus of authority which is in close proximity to him:

> "There's generally a consensus between [R202] and [R201] already and they've had the conversations they need to have so then the Design Team and others can… and it works really well. It makes, it makes my life easier" [R201].

This unity is important as having two lines of command and information can be problematic for those being managed (Reeser 1969; Tyler 2010). The project team, in effect, comes together to provide a clear line of reporting for the client project manager. The compression of the lines of information and decision-making also helps to address the loss of fidelity and value meaning transmitted to the client project manager. But this is not always apparent, for example, with the information and values from JV board. Whilst these should "filter their way through down… there is no formal route for this to occur" [R203]. Hence the client project manager's preference for the current project team arrangement is unsurprising. This increases the proximity of power to users and the design team and, in terms of the latter, there is evidence that this improves morale and value transmission (Huang 2017).

6.9 **Tools**

Project management provides organisations with an instrument for making

rational choices (Dillion 1998). However, projects often fail in part because formal models are too static and tend to be built in at the start of a project with little scope for heuristics (Tuuli et al. 2010). The council's project method attempts to acknowledge the futility of a one-size approach by describing the process as an "underlying tool used to create the project environment needed to deliver projects according to a specific business case and the council's strategic management plan" (C2D3 2007). Nevertheless, it is based on a standard PRINCE 2 process which was designed to, "access government funding" [R205].

This contradiction between the formal processes and rules and the needs of stakeholders (community) is apparent in the power relations between the users and the project method. This acts as an article of power, with the handling of ambiguous relationships acting as an information object which seeks to convey the organisations values (Skovira 2008). The response to this contradiction is evident in two ways, distancing and the reconstruction of the information processes.

Geoff (the Project Director) made the point that "we used [the council's project management] method to help us once the location was chosen… the project management kicked in after we chose the site" [R201]. Thus, a key tenant of the subsequent political information behaviour is limited by the joint venture agreement which sought reconciliation of the partners' objectives and aspirations prior to the concept phase. As a result, the council and TCC could engage in distancing from the normative project requirements for transparency and evidential rationality to achieve their respective goals. As a result of this distancing, the values of the board are somewhat concealed and whilst they should "filter their way through down… [to the project manager] … there's no sort of formal, you know what I mean, briefing route for those" [R203]. As such, information and value-laden constructs are verbally relayed to the client project manager via the other project team members, whose seniority gives them privileged access to the board meetings or to those who attend them.

The second example of distancing arose from the use of project method with the users. Within organisations, power must be applied through levers – in particular technological and administrative levers (Hales 1993; Kelly 2007). Within CHAT these levers, which mediate the relationships between the subject and their objective, are termed as tools. These tools can be either

material (e.g. computer software or a plan drawing) or semiotic (e.g. symbols and signs) (Barab et al. 2004). The project manual used by the council is a tool that assists in the co-ordination, production and sharing of "…useful and vital information during the project lifecycle…" (C2D3 2007) and to ensure that an appropriate audit trail exists [R201]. However, despite the warning that "…those who don't follow it do so at their own risk", [R205] there are temporal and political processes at play which affect the tools used to manage the engagement between the council and the other project stakeholders. These forces limit the application of project method as a means of managing information flows and decision stages, but does not prevent collaborative information practices. Den, reflecting some of his experience and perhaps the misgivings of some stakeholders, notes that the method "can feel very controlled, can't it?" As a result, the method is not strictly adhered to as stakeholders "don't necessarily have to know the detail" [R203]. In a similar vein, the use of the latest BIM is not shared with the user groups as "very few stakeholders can read 2D" [R201] suggesting what is meaningful data for one group, requires conversion and contextualisation for another to achieve the requisite information quality (Detlor et al. 2003).

In seeking to attend to this risk, the communications are outward looking and user focussed. The co-option evident in the wooing of the contractors, workshops and user groups is aimed at shared problem identification and information seeking and exchange. This enables the council and its design consultants (and project managers) to create synergies by extending the reach and mass of the project domain but without extending decision-making and analytical powers to this temporary and relatively powerless hinterland.

This approach is not uniform, however, and some stakeholders have more power than others. As a part of the council, the Redline Theatre has been relatively inconspicuous within the case. Most reports point to the need to safeguard staff and get a new facility that will achieve the aim of an "ambitious brief" (C2D9), suggesting a Redline Theatre (RT) that has failed to fulfil its potential. This similarly constrained potential, by virtue of its existing location, is expressed very differently when referring to the Bardle Arts Centre (BAC), which is described as punching "above its weight" and "entrepreneurial and ambitious". Whilst both organisations are "well-loved and attended" [R202], the independent operation and a younger and arguably more media savvy client base helps it gain power within the project

domain, aided by it also being external to and relatively unfettered by the council's norms.

6.9.1 Problem Identification and Information Need

Whilst there is some strategic problem identification highlighted within the Executive board reports which are publicly available and which can be commented upon in advance, reports of this magnitude are unlikely to be published without prior political agreement on the outcome (C2D6, C2D7, C2D9). Also, the reports and analysis which underpin them are primarily within the domain of the council and the developer, who have complete discretion over whether the project is constituted or not (C2D9) and much of this process occurs in private and outside of the information sharing purview of the council's project method. The visible portion of this process occurs within the workshops and user groups. This is where those with a substantial financial and reputational interest in the project need the input of other stakeholders. This collaboration is needed by the former to reveal extant information and to provide a coincidence of interests by offering to listen, with the ability to shape the project whilst there is still scope for changes to be made. This helps to build trust, for example Lucy's [R202] decision to throw open the problem identification phase which may have also helped to remove the inhibitions associated with hierarchy barriers evidenced in case 1.

6.9.2 Information Seeking and Sharing

There is considerable overlap between problem identification and information seeking and sharing activities. Extranets, 3D tools and project management systems are used to share and seek information between consultants and the council's project staff. Whilst there may be information within that needs to be concealed, the main transformative process involves how the information is displayed and where it is presented. There is a clear preference for user group engagement to be held face-to-face. Also distancing users from project method may increase trust and the ability to transmit values through personal communication. This face-to-face communication can provide richer information than ICT based communication, which lacks social context cues and social information about the group (Lira et al. 2007).

6.9.3 Analysis

Both the analysis and the information seeking at this stage is informed by "specialist consultants". They are able to bring externally generated expert knowledge and examples of similar projects to compliment the extant knowledge available to the project team. Much of this specialist analysis is undertaken by people "independent" of the user groups, thus enabling the council to challenge some assumptions. As Lucy described it, "The [user groups] know what they're doing now…[but] tend to, in my experience, be less good at dreaming… it's really difficult to help them with that leap" [R202]. Although this analysis was not made available publicly, a distilled version of the proposal was released as part of an updated planning framework and ultimately as part of the planning application. Both the updated planning framework and the Grange Place planning application were widely shared, with the latter available for public comment.

6.9.4 Validation

Validation processes occur at two levels. Firstly, the simple ratification of decisions at one stage before moving to the next. Given the lack of familiarity outside of the project team with project method, this validation is especially important for end users, whose focus is primarily on the potential offered by the new performance space, rather than the detail. As the client project manager [R203] noted in terms of the end users, the challenge is to "…test what we were doing with the guys who would be, in effect, using the building… rather than designing a building that we thought they wanted" [R203]. This corroboration was undertaken through regular user groups, with information from these meetings contributing to the instructions given to the design team by the project manager.

Notwithstanding the role of the project team members, the formal stage by stage project validation is judged by the project board. This provides a significant motive for the analysis at the project team to be thorough and fully owned by its members, in order to avoid contested collaboration from becoming apparent at the board meeting. Information seeking and use based on knowledge of the project board's norms allows the project team greater informal authority and provides a more predictable scalar chain, as Den [R203] noted:

"There's a lot of ownership on the Project Team so that you feel that when

the decision's being had, there's a completely valid discussion really, it's not gonna be sort of, you know, side swiped by the Project Board."

6.10 Activity System Analysed

This section examines the activity within the project domain through the lens of CHAT underpinned by Critical Realism.

The precursor for the activity system at the centre of the research was the mediation of legal, policy and political arrangements that provided the context for the initiation of the project. The establishment of the JV Board enabled the development of the JV agreement, mediated by the legal and financial powers of each organisation (Figure 6-4: A). Against a backdrop of uncertainty over how two well-loved cultural uses would fare, in a modern building on the other side of town, there was a circumspect and an occasionally negative social media response to the proposal (C2D22). The involvement of a major developer, with what was perceived as a shareholder capitalism motive, added to the distrust. The tension between the public and the council/TCC partnership (Figure 6-4: A2) was somewhat blunted by the traditional media coverage. This was generally positive, spurred on by regular messages about transformations and momentum in the context of a difficult financial backdrop (C2D30) from a well-versed council and TCC public relations effort, albeit that the comments pages attached to most stories mirrored the mistrust expressed within the social media discourse.

The Grange Arts Collective CEO was also a regular contributor to these press release inspired stories. Apart from this, most publicly available information arose from council committee reports which emerged when the council was required to make formal decisions at critical points in their negotiations with TCC. The details about the deliberative process within the JV board were limited and messages were based on what was agreed rather than what was discussed and this was the subject of some social media and comments page coverage (C2D26). The establishment of the JV board enabled these discussions to be treated as privileged thus placing restrictions on the council's general duty to share information under the Freedom of Information Act (Figure 6-4: A1). Project management information and council decisions are normally codified but this would have led to tensions between public and private interests (Figure 6-4: A1). The tensions between the council's public duties (Figure 6-4: A2) and commercial confidentiality

(Figure 6-4: A1) helped to create an accord in the form of the joint venture agreement. This provided the scope for the building to be developed but with only limited room for manoeuvre, primarily due to financial considerations. Hence the need to adopt a co-ordinated approach to the areas of potential co-construction.

The mitigation associated with the financial and reputation risks required an agreement which would provide the project with as much certainty as possible. Therefore, the development framework originally drawn up before the JV agreement was updated to match the final concordat (Figure 6-4: B1). This framework was used to help bring about consensus, provide an outlet for community consultation and to provide a technical backdrop to the planning applications needed for Grange Place, which would expose the council and TCC to further scrutiny (Figure 6-4: B2).

The outcome of this activity was a decision to separate the project and the site selection process, thus limiting the exposure to macro-political influence at the early stages (Figure 6-4: A&B). The Project Director [R201] made the point that "we used [our project management] method to help us once the location was chosen… the project management kicked in after we chose the site." Thus, unlike case 1, the project vision was created in isolation from the project methodology within a setting where political, legal and financial needs took precedent over project processes, thus avoiding many of the tensions observed in that project.

Nevertheless, there was still some uncertainty about the process from staff within RT and BAC (community) concerning a loss of autonomy and questions about whether the financial climate would constrain the building and their intended use of it (Figure 6-4: C1).

> "[TCC] want the best possible return on their money on the same area and if quality or something maybe has to take a hit because of that then that's where the tension can come in" [R203].

This was complicated by a challenging timescale and tensions between RT, BAC and the project method (Figure 6-4: C2) which was being used to drive the information exchange between the stakeholders,

> "because the client, the ultimate user, is often someone who's never had any responsibility, experience of a capital project… you have to have a

> great degree of understanding about the needs of the end user" [R202].

This, and the council wanting to be seen to be capable of delivering its part of an important development project, put the onus on the council to work effectively in partnership and to militate against barriers to the information exchange necessary for this unique project. This requires the effective engagement of both the council team and the RT and BAC users.

The confidence of the project manager was such that prior to the project getting formal sanction from the JV board, she organised a half-day workshop with the council, a user and developer stakeholders to identify barriers to the progression of the project. While the approach is predicated on creating a collegial approach to the project, it is also designed to identify problems and information needs in a timely manner. This piece of "risk analysis [took place] very early… [and identified] the key pieces of work that we might need to do… it was a chance for the users to describe what they did, what their business was all about and I also had the developers there" [R202]. In this instance the multi-voicedness opens up opportunities for collaborative information structures and synergies, which increased the capacity of the project domain to identify and resolve problems. This 'big room' approach also supports Reddy and Jansen's (2008) assertion that information seeking is as much about producing new knowledge as it is about finding existing information.

As for RT and BAC, there was lots of consultation. The council's ability to use its financial power to force agreement was blunted by timescales and the involvement of the Arts Council as co-funders of one of the cultural uses, making it "really important that everybody agreed" [R202]. The tensions between the users and the council were brought to a head by the "million-pound problem in the cost plan" [R203].

This led to a choice for the council.

> "We could go away as a sort 'knock this out and knock this out,' and bring a scheme back that's completely unpalatable, nobody likes it but it's on budget and it works. But there was none of that in this in that we all had ideas… it was a very collaborative process… there was obviously a bit of tension now and again but generally everybody understood why it was being done" [R203].

In terms of project method, the project team was, unsurprisingly, familiar with it but users had to be coaxed along as "it can feel very controlled" but there was a sense that "when they actually see it working they do appreciate it" [R203]. The client project manager avoided being dogmatic about the tools used: "They don't need to know it, but they need to understand why you're doing what you're doing."

Both examples illustrate the importance of collaboration in understanding the "why" questions. This can only be achieved from a shared perspective of the contextual and situational factors shaping and constraining events. Only limited divergence between personal values and norms helped to enable the project team to have a unified approach to the project by limiting micro-political activity to focus on the project and on managing expectations within the council and user groups. Trust was also important, both from the leadership of the council and from the new CEO for the Grange Arts Collective. "He understands what we're doing, he's got faith in [R202] and in the same way [R202 has] got faith in him" [R203].

This was evidenced by the information behaviour of the project team. The context, including the relative separation of the project and political domains, meant that the team could afford to focus on the substance of delivering the project. For example, political issues were sorted out in advance of meetings. The project manager conducted regular one-to-one meetings with the project sponsor so "there was no surprises in terms of papers or ideas presented at the Board" [R202]. In addition, she and the project director would:

> "…meet the Chief Exec to make sure (he was) aware of any issues and there was a number of Committee reports drafted and those Committee reports would make sure that the politicians, the members, were supporting the project and, on occasion, the Chair (of the JV board), the Leader of the Council, would be briefed on proposals at key stages" [R201].

Whilst the council's project method says that the board is responsible for providing decisions that affect the progress and delivery of the project, in practice much of the decision-making occurs within the project team, which also embodies some of the powers and authority of the project board:

> "…There are a lot of decisions taken at the Project Team level, led by [the

project manager] really, cos [she's] got a lot of authority to basically make decisions" [R203].

These factors helped to create congruency within the team and a collaborative approach to the project, both as a result of the shared values and trust, but also because of necessity, the demands of the JV agreement and the reputational consequences of failure.

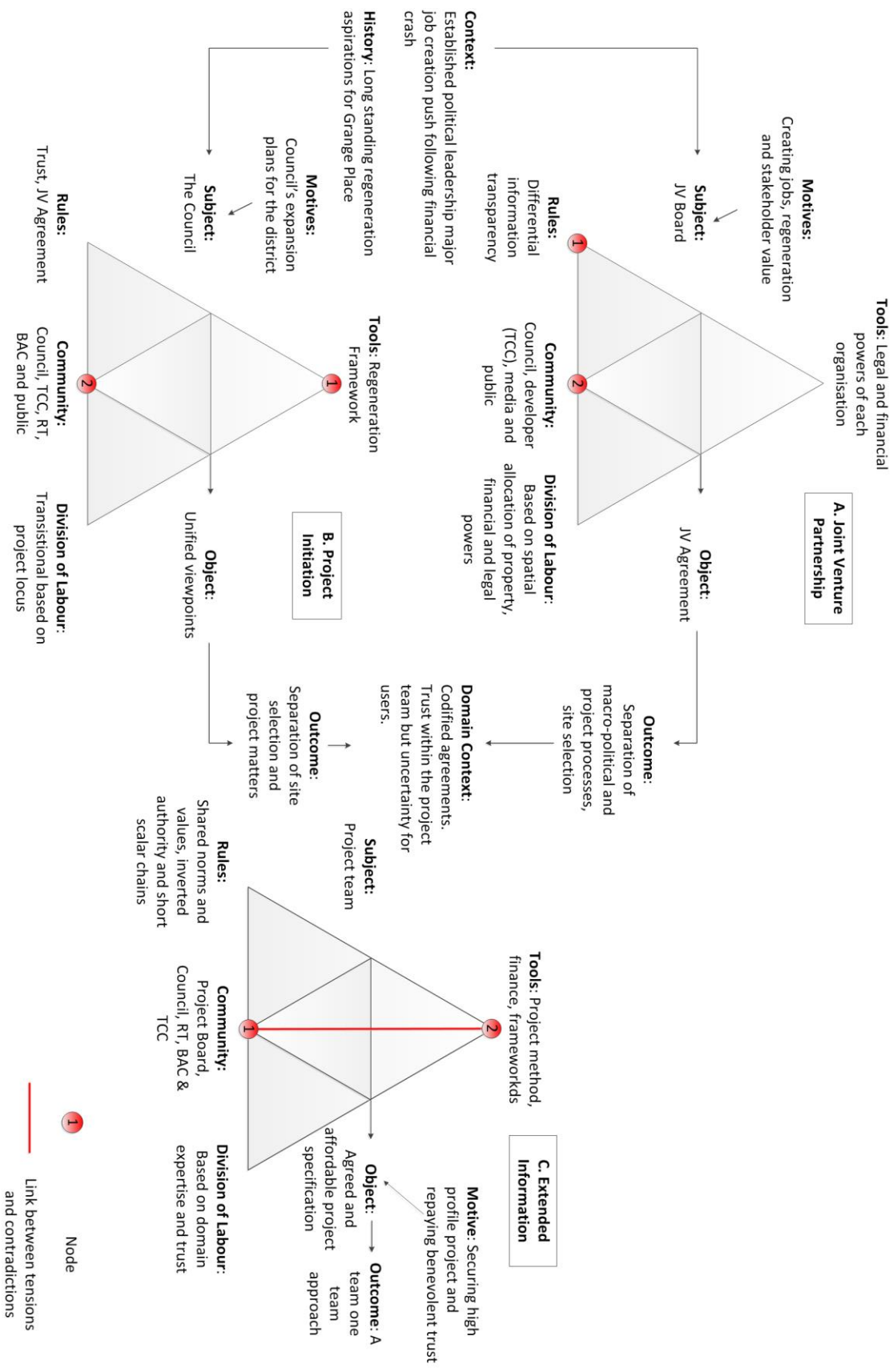


Figure 6-4: Case 2 Activity System

6.11 **Conclusion**

This chapter presented the findings of the case 2 activity system. The precursor activity systems to the one being researched enabled the development of policy and legal frameworks that helped to provide a relatively stable context, whilst limiting macro-political interventions. This created space for the project processes to unfold, framed by the situational environment primarily represented by the user groups.

Benevolence and competency trust gave the project team the ability to speak authoritatively on the information needs of the project and reduced the scalar distances to the project board, design team and user groups. The ability to provide a clear message to the temporary and informal groups surrounding the project team provided certainty. Competency trust gave those relying on direction from the project team the confidence to know that information use decisions made close to them would not be overturned later. This provided the potential to enhance trust further, whilst extending the influence of the project team and enabling information exchange in areas where the acquisition of the domain knowledge of those affected by the project was paramount.

The development of this one-team approach was led by the de-facto project manager. She had the benefit of previous working relationships with the user groups and the project sponsor. This trust combined with her project management function enabled her to take on a central role between the political and technical domains. The client project manager provided a gatekeeper role which helped to raise awareness of the council's values with the private sector, helping to prevent barriers to the project team's information seeking and exchange activities. Shared norms and values within the project domain enabled this approach to manifest itself without the micro-political behaviours and the information exchange barriers seen in case 1. By enabling the project team, the potential for micro-management and information overload at the board level was avoided. Trust and value alignment enabled the project team to subsume some of the project board's functions to the benefit of the project overall.

Chapter 7 - Discussion of Findings

7.1 Introduction

Chapters 7-9 will discuss the findings relating to research questions in the context of the existing literature. In this chapter, the nature of project team information behaviour is discussed with particular reference to the role of trust and information values within a wider project domain influenced by contextual and situation factors. In chapter 8, the notion of information spheres and value refuges are discussed as a counter-balance to the asymmetry between the dominant socio-political domain and the more rational technical domain. In chapter 9, hidden information behaviour is discussed as a method of reconciling tensions within the project domain and normalising highly subjective or deviant activities. Finally, chapter 10 addresses the contribution to the literature on information behaviour, project management and theory.

The research began with two questions which sought to explore the relationship between public sector project teams and the nature of and factors that influence their information behaviour.

1. What is the information behaviour of project teams involved in local government construction projects at concept stage?
2. What contradictions and congruencies influence the intervening variables that shape information behaviour within the project teams of local government construction projects?

Using CHAT and Critical Realism, the research explores the tensions and contradictions within the team dynamic to understand the factors – both hidden and overt – that motivate the information behaviour of project teams. A modified version of Kelly's (1963) Repertory Grid is used to help construct a framework for shedding light on emergent and implicit motive from the respondents, as individuals and as a group.

7.2 Project Team Information Behaviour

Whilst the two cases contrasted the experiences of the dysfunctional case 1 project team and the functional case 2 project team, there were several similarities which are discussed in this section. During the process of

organisational change, which forms the basis of most projects, history matters (Sydow et al. 2009). History is also a fundamental component of CHAT as every system has a history of interactions which – when viewed from a slightly different point in time – may be represented differently whilst constituting their own activity system (Barab et al. 2004). As both cases illustrated, many public projects have a long gestation period which can occur over many years. This past experience leaves an imprint on the psyche of those working in the organisation which must be confronted when subsequent attempts at change are made. This can affect how people approach information needs when seeking the "knowledge people" and in finding specific strategies that take into account a particular context requiring knowledge of the project history and its present and future implications (Pemsel et al. 2014).

> "People [were the primary source of information] because they'd had previous involvement with the project. Because this project probably started initially ten years ago… they did do some work but nothing came of it in terms of a clear decision and moving it forward. So, I was going back and finding the knowledge people who'd got that knowledge and background" [R101].

In both cases, the project team and project board structures reflect the standard project team/project board role division between day–to-day project development and oversight and resourcing, respectively. But projects are unpredictable and therefore the power of the project team to adapt to changes and empower the project team manager through the formal or informal communications and the organisational structure is important (Huemann et al. 2007). The research contrasted case 1, where this was not the case, and the coping strategies used by the project orientated staff to deal with this lack of authority, with case 2 where there was trust, a shared worldview across the project domain and a cogent situational framework that enabled, rather than, hindered collaborative information behaviour.

Information needs within the project domain also emerge from the requirements of the project task or sub-tasks allocated, as anticipated by several authors (Vakkari 2003; Ingwersen and Jarvelin 2005). This need is also shaped by the actor's worldview of what the direction the project should or should not take and the efficacy used to seek resolution. This worldview is shaped by contextual and situational factors along with the role of the actor

and their previous experiences, which give rise to particular information needs (Leckie et al. 1996). The information-need motive is either intuitive - suggesting a reference to their worldviews as indicated by the bi-polar surveys, driven by strategic considerations and the wider benefits of the project, or a combination of project processes and intuition. However, a lack of domain knowledge leads to a greater reliance on intuition as a driver, whether in tandem with the specific task needs or not.

Information seeking is undertaken by individual actors on behalf of the project team. Information seeking is generally not duplicated. Domain specialists seek information within that domain, using previously established contacts in order to benefit from trust and familiarity. This suggests that the notion of collaborative information seeking as a joint exercise is challenged within project environments where collaborative information coordination may be a more apt description. Where resources are constrained and domain knowledge is not duplicated as there is no benefit for having more than one specialist within the team, information seeking is undertaken separately. Information seeking is divided based on domain specialisms; once seeking is done knowledge is recombined and validated by the project team before being passed to the board for consideration.

The predominant mode of exchange within the project domain is influenced by the degree of collaboration or co-operation between teams. In teams with high levels of trust and similar worldviews to those of the wider project domain, collaboration is the dominant method of information seeking and exchange. In dysfunctional teams, where there is more circumspection over roles and motives and a significant disparity between what is and what should be, there is more competition for the control of the information-gathering process. Toma and Butera (2009) have argued that the contrast between competition and co-operation is of critical importance in hidden profiles and as a result information sharing should be considered as a process of motivated activity directed towards the achievement of group goals.

Irrespective of the effectiveness of the team, the boundary between the project board and project team is indistinct, albeit for differing reasons. In dysfunctional teams, the activities of some project board members and their information seeking and use of information overshadows the project team – making it invisible and lacking in authority. Conversely, in functional teams

the board surrenders some of its role and influence in the knowledge that the project team has the 'right' values and trust to make the project work. In functional teams, mutual trust and value-alignment enable its role to be extended to adopt some of the board's decision-making functions.

7.3 A Model of Project Team Information Behaviour at the Concept Stage

The research found that the notion of a static project team as represented in project method is tenuous. The project team at concept stage is a series of team typologies which are shaped by situational and cognitive factors. These factors help to shape the effectiveness of the team, ultimately judged by the extent to which information – and the teller of information – can influence others, i.e. strategic information behaviour.

In the model produced, the four quadrants begin with the low-trust and low-value alignment teams, which are invisible due to structural tensions and the micro-political activity arising from an inability to affect it (see Figure 7-1). Information spheres are a coping strategy designed to shift temporality and physically the grounds on which information and power are transacted in order to maintain personal worldviews in the light of unfavourable project domain information norms. In contrast to the limited information horizons surrounding invisible teams and spheres, the cutting room opens the organisation to a diverse range of relatively value-free information. This unfettered information helps to minimise risk and the act of sharing and listening helps to build a one-team approach. Finally expanded teams using 'information porting' to co-opt other groups within the project's sphere to enhance its effectiveness.

There is also a diagonal axis from bottom left (LP) to top right (HP), indicating the relative power of the project team as compared with the project domain. In the invisible team, power is low; it is higher in the extended team. For spheres, localised power is higher than in the invisible team, reflecting the focus on information rather than rank, together with the power of their collaboration. For the cutting room, the power reflects the diversity of informational power available to those participating in the collaborative processes and therefore the power is more generalised.

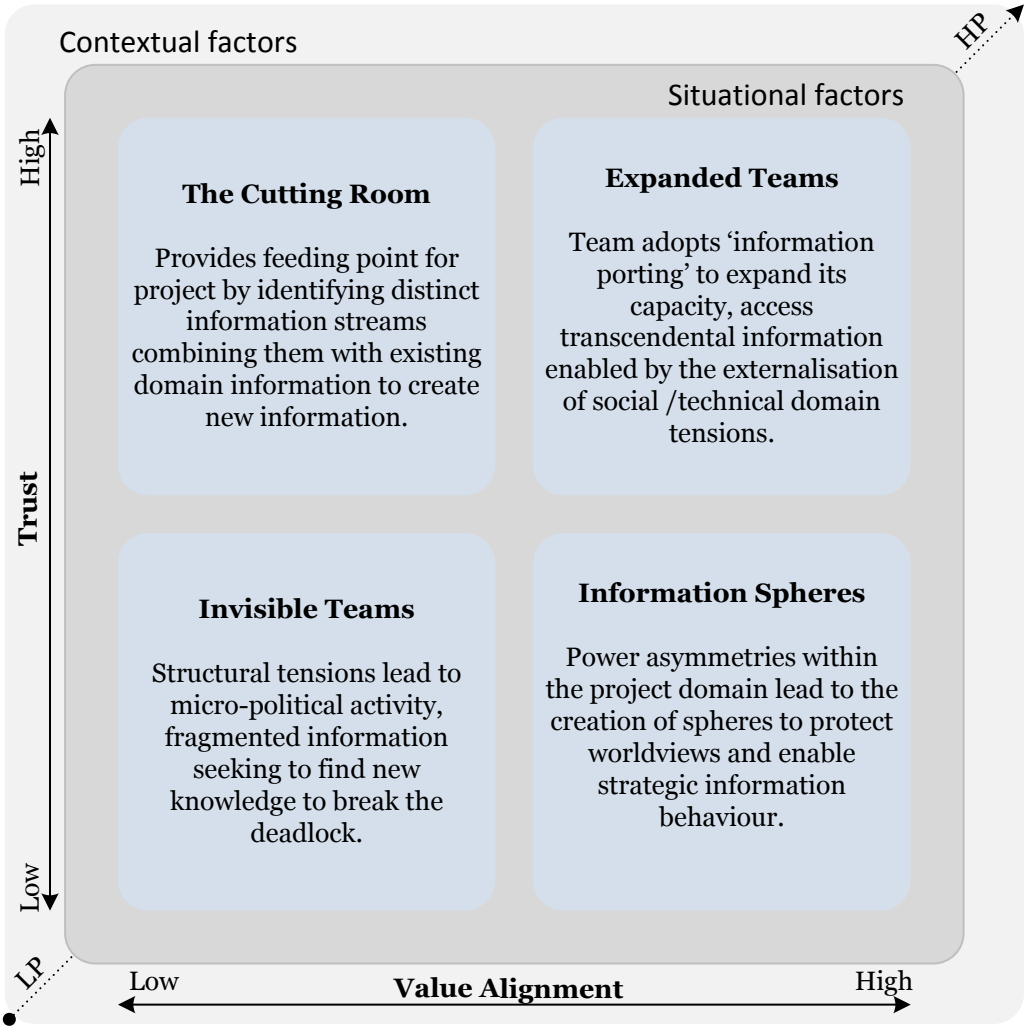


Figure 7-1: Model of project team information behaviour at the concept stage

7.4 Invisible Teams

Unlike most information seeking models which focus on the information needs of the seeker, information seeking within the project team is also aimed at informing and perhaps persuading others, often in more senior positions. Contradictions and tensions arising from macro-political activity which leads to tensions between the social and technical spheres also result in significant micro-political activity, undermining the inherently collaborative view of group information behaviour (Perez 2015). Like Allen's PiSA these forces may render the project team (and board) unable to choose from the alternatives presented, thus undermining collaboration (Allen 1997). This is particularly pronounced when there is tension between the norms and values of the actors within the domain, making the ability to

influence others more challenging.

Invisible Teams

Structural tensions lead to micro-political activity, fragmented information seeking to find new knowledge to break the deadlock.

Where the difference between these worldviews is substantial, less powerful staff will seek the "knowledge people" in an attempt to break the deadlock and cut through the micro-politics which they believe has stymied the project previously. They seek this "objective knowledge" to achieve what French and Raven called socially independent change (French et al. 1959). This change is designed to be free from the historical, rank or personal prejudices that might otherwise affect the validation or acceptance of the information being presented. Before achieving that goal, however, information has to be communicated. In dysfunctional project domains senior staff may exhibit information avoidance, which limits the informational power of the project team. The low social presence of the project team exacerbates the barriers to information and exchange and the development of shared meaning (Huang 2017).

> "So, it's a multi-stream report but the problem is it gets submitted to the board, no one reads it. You try and highlight key the issues and suddenly you're out of time, it gets very frustrating sometimes" [R106].

Giving senior staff, who have little time, prominent positions to reflect the political importance of the project leads to information overload, a failure in decision making and inertia. This and the wider structural tensions render these project board members unable to properly express their information need at a point in the project conceptually aligned with the exploration phase of Kuhlthau's ISP. At this point, uncertainty indicates a zone of intervention for collaboration with or by information intermediaries (Kuhlthau 2010). The zone of intervention is based on Vygotsky's zone of proximal development, which identifies an area where the intervention of a knowledgeable 'other' would be of benefit to someone seeking knowledge. The zone of proximal development is the distance between the level attained by independent problem solving and that which is possible with guidance or collaboration. The zone of intervention may be considered in a similar fashion. As a result of the board's inability to work collectively or to engage fully with the project team, communication becomes difficult. A lack of feedback, or the more uncertainty there is related to it, the greater the variety

of strategies individuals may seek to secure it (Johnson et al. 1995). In the face of these barriers to information seeking and use of information, alternative approaches are considered (see 7.5 spheres).

The contrast with extended teams supports the argument of Kuster et al. (2015) that cross-discipline collaboration can only be done within project teams, as it needs their energy to collaborate within a singular goal-orientated mode. Instead, invisible teams are in competition with the project board to find solutions for information needs shaped by a political context which exceeds their capacity to influence. This competitive approach is also exacerbated by a lack of generalised trust, or a view by senior managers that the information being produced does not meet their expectations as the information supplied is merely part of a wider set of information sources or a route to ratify his or her intuition (Byström and Hansen 2005).

The role of effective phenomena on the activation or prevention of information seeking is acknowledged within the literature (Wilson 1999; Savolainen 2014). Some of the solutions sought to break the impasse, such as better leadership, spoke to a notion of seeking simple solutions, within a complex context. This was also reflected in the narrative of the respondents, who felt they wanted some near-term milestones to deliver against, given the backdrop of past project failures. This framing of solutions depends on intrinsic representations, rather extrinsic characteristics, as our cognition seeks to reduce complex external alternatives to relatively simple internal representations involving our fundamental subjective attributes (Bernheim 2014). This option-choice dynamic is also reflected in findings from Park and Lee (2014), where a lack of interpersonal ties reduces the ability to transfer non-codified information where face-to-face interactions are often necessary requirements (Laursen and Salter 2006). More tellingly Levin and Cross (2004), who looked at the different roles of strong and weak interpersonal ties, found that strong ties help to resolve complex problems while weak ties proffer simple solutions.

These factors lead to a lack of information exchange between the team and the board and to a breakdown in the informational role of the project team, rendering it invisible to the project board. The board, in turn, looks to undertake its own information seeking and problem identification, thereby bypassing the expert knowledge within the project team motivated by concerns over performance (Turner and Müller 2004). This encroachment

exacerbates the time deficit faced by the project board members who, encouraged by a preference for individual over collective responsibility within the project domain, further marginalise the project team.

> "[The council] looks at some of its projects, sometimes it's a bit of a hierarchy thing creeps in and people say, 'Well I sit on the board and let the team sort everything out'. Well hang on a minute at this particular point in this project's history people actually need to come together to find a solution" [R103].

At this point, members of the dysfunctional project team engage in satisficing activity focusing on activities which remove them from conflict, perhaps focussing on information centres where engagements are more predictable and low-risk. Alternatively, they seek to protect their personal information values, awaiting or seeking tactical interventions that aim to achieve change at another time or place. This seeking of an 'information refuge' enables the shielding of information from the legitimate powers of others who could attempt to frustrate the continued link between personal information values and the task. The vehicle for this activity is the information sphere. These options reflect both the constraints on the power of those within the project domain and their efficacy, in the face of the prevailing situational factors.

7.5 Information Spheres

Where there is a lack of norms and value-alignment between the project team and project board or sponsor, there is the danger that being open about your information behaviour would lead to some activities being closed down and activity directed towards areas that are deemed to be closer to the prevailing political will. Even if the sponsor instructs a particular pattern of information seeking and use, for example to prepare a report, this does not prevent some of the project team spending time searching for information they feel will break the deadlock or doing what they feel is right, irrespective of the power differentials between the project team and the board.

Information spheres are created by like-minded individuals to protect information behaviour and influence normative information values where there are tensions between the socio-political and technical information values and where formal project structures prevent a wide range of

information from being freely exchanged. These information spheres are enabled by strategic information behaviour, 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 behaviour in others (the objects). These spheres are temporary structures designed to curate and nurture information until, in the view of the participants, it is sufficient to be shared outside the sphere.

Information Spheres

Power asymmetries within the project domain lead to the creation of spheres to protect worldviews and enable strategic information behaviour.

At this point information and the arguments therein are shared with trusted people outside the sphere, but within the project board. These can be regarded as associate members of the sphere. Whilst the research did not directly observe this, the narrative suggested that the new information would be presented to the board in front of the sponsor, subject to a favourable initial response from the associate members of the sphere. This pause, introduced by spheres, enables the grounds and conditions upon which the discourse takes place to change in favour of the sphere's members, as spheres enable a transfer of power towards those actors whose position is weaker than those privileged by the normative structures. Inside the sphere, an environment is created that is less dependent on hierarchies for judging the merits of the information produced. Within project teams, the visible manifestations of strategic information behaviour are more apparent in domains which lack coherence and a singular project narrative to shape the information behaviour of the actors within the project domain. Information spheres are discussed further in Chapter 8.

7.6 **Expanded Teams**

Members of project teams seek transcendental information, i.e. information that transcends the boundaries of the project and the organization, to understand the underlying factors within the wider project whilst attending to its constituent parts by promoting cooperation. This transcendent information enables project team members to attend to issues not directly linked to the project task, such as being cognisant of the day-to-day operation of those interacting with the services affected by the project during

its development, as this enables information exchanges to be tailored within a common vocabulary. This, in turn, helps to augment generalised trust and manage expectations that would otherwise undermine the project and the relationships between actors. Transcendent information can also help to align domain knowledge, especially when users are unfamiliar with project management, construction or the language and processes that enable them.

Expanded Teams

Team adopts 'information porting' to expand its capacity access transcendental information enabled by the externalisation of social / technical domain tensions.

In expanded teams, at least some members of the project team will have worked together previously or there is propagated trust. This process is enabled by a strong attachment to collaborative values. This leads to greater generalised trust, supporting Muller's findings that frequent collaboration is of the highest importance, more so than the information itself (Muller 2004). Strong interpersonal ties also improve information and knowledge transfer, enabled by competence based trust (Levin and Cross 2004). Within the functional project teams, the inversion of the normative authority arrangement occurs where there is substantive norms and value alignment within the project domain. This may have been influenced by the selection process of the actors within the project team, with familiarity of each other and experience in the domain affected being an enabler, or by the situational environment. Domain values are maintained through gatekeeping and a shared domain knowledge with new actors. Like Allen's PiSA, this gatekeeping only works if there is a shared perception of the problem being attended to (Allen 1997). This shared perception is aided by value-alignment and experience. In turn this is empowered by trust, which is an important precondition for information work within organisations (Widén-Wulff and Ginman 2004; Widen and Hansen 2012; Huvila 2013; Huvila 2017) and is socially embedded within the norms and values of the organisation and the people within it (Toma and Butera 2009).

> "They really do believe in this partnership approach and bringing everybody in… I know how they work and actually they know I'd sort of bring [the private partner] up-to-speed in terms of how [the council] work in terms of that partnership approach, the way you negotiate your contract is very different to a competitive environment" [R203].

Trust also empowers people engaged in the project team's information activity to make decisions based on informed discussions, with those reliant on the outcomes confident these judgements will not be reversed by the project board.

This rubber-stamping role adopted by the project board supports Hanappi's argument that increasing flexibility leads to changes in the control hierarchy, which effectively removes some hierarchical levels and reduces control distances (Hanappi-Egger 1996). This, in turn, provides the design team and technical project officers with confidence that their work has relevance. It also provides an early stage project steer and an easily accessible entry point into the project structure. This reduction in the scalar distance between the design team, project team and project board helps to transmit and share meaning from senior management to project staff, to help create a one-team approach to the project, supporting Chatman's (2000) proposition that some types of information can only be distributed across a short scalar chain because relevance and value are lost as information is diffused. This information porting from one group to another amplifies the influence of the project team. In this context, Young-Hyman has argued that wider distribution of power improves organisational performance by helping to align goals and improve the speed of information dissemination whilst giving staff the autonomy to respond to shifting external requirements (Young-Hyman 2016).

7.7 The Cutting Room

The cutting room is where new information is sought and evaluated in real-time. While the method is predicated on creating a "one-team mentality" to the project, it is also designed to identify problems and information needs in a timely manner and to get people from different perspectives in the same place, irrespective of position or organisational background. This sharing, defining, challenging and recombination of information supports Reddy and Jansen's (2008) assertion that information seeking is as much about producing new knowledge as it is about finding existing information.

The Cutting Room

Provides feeding point for project by identifying distinct information streams combining them with existing domain information to create new information.

Whilst this forum may discourage some from opening up, it also privileges their unique roles and knowledge whilst specifically involving not just the "key individuals" but people who are often hidden behind layers of hierarchy. This empowerment is enabled by the social presence of project team members and senior leaders within the council and the competency trust placed in the team. Big rooms suggest a synergetic multi-voicedness where language and text are used to mobilise actors across different activity systems in mutually recognised and enacted genres (Sannino et al. 2009). This opens up opportunities for information structures and synergies, which increase the capacity of the project domain to define and solve information problems.

This 'big room' approach has limits. The design team may attend more senior project board, but only attend project team meetings by invitation. This allows the project team to provide an independent check and challenge to the information presented to the board. It does this whilst maintaining the ability to exercise political discretion without sharing sensitive information or tactical briefings with the external contractors. External advisors, such as the consultant project manager in case 2, may be regarded as an exception. As such trust arising from their previous experience makes them project insiders capable of being trusted with sensitive information or the privileged worldviews of more powerful actors.

7.8 **Conclusion**

This chapter discussed the strategic information behaviour of the project team, functional or dysfunctional, and the factors that affect it. Strategic information behaviour, because of its potential to affect major decisions, is susceptible to a wide range of factors that extend well beyond task information. These variables include macro- and micro-political activity and the situational needs of each project. But the collaboration and authority required is enabled fundamentally by trust and shared values, both of which reduced the incidence of disruptive micro-political behaviour. Yet not all micro-politics are disruptive. The development of informational spheres as a way of protecting project information in the face of power asymmetries is a modest but interesting contribution. Strategic information behaviour is also enabled by the ability to manage the information needs and to develop an effective knowledge of adjacent domains whose activity, both historical and

anticipated, can shape the information behaviour of the present.

Chapter 8 - Information Spheres

8.1 Introduction

Within functional teams where there is generalised trust that encourages collective actions and where ontological ambiguity is limited, project teams exhibit many of the characteristics described by Chatman's "small world" theory (Chatman 1991). Where there is ontological diversity and tension between the politics of the parent and project organisations, the coherence required for small world evaporates within formal structures and actors have to enable information exchange through alternative structures to maintain information values and the cognitive authority of their peers. This is enabled by the co-construction of a new instrumentality shaped by the project and shared values unfettered by the reification of traditional hierarchies.

8.2 Information Spheres in a Contested Context

The point is that the project is never just the design and implementation tasks created from the sponsor's vision. So, whilst the case studies have a building to deliver, they also need to:

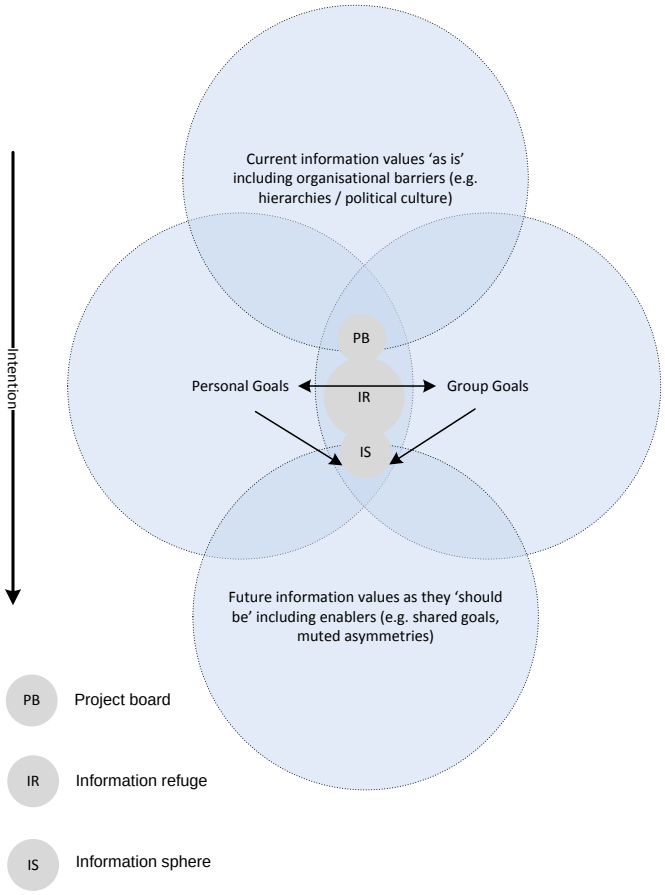
- manage political expectations and avoid reputational damage
- ensure that stakeholders are engaged and do not feel taken for granted
- maintain the coherence and productivity of the project team

These other 'tasks' are always being reconstructed and interpreted by the subject of the activity system and what Engestrom calls "psychological instruments" that cannot be controlled externally (Engeström et al. 1996). Understanding this dual role is essential during the concept phase, where greater ambiguity over the nature, motive and implementation of the project exists and where stakeholders have maximum opportunity to influence and reinterpret the brief. It is also the point where the codification of knowledge is least developed, allowing space for micro-politics to affect the options and contextualisation of the project and the sub-tasks that relate to it.

Ignoring the ability of, or likelihood that actors will reinterpret the brief, the project board in case 1 fails to recognise the information seeking potential of the project team, missing the opportunity fully utilise its role in the zone of intervention (Kuhlthau 2010). A lack of social presence also limits the

opportunities for exchange and context-shaping by subordinates responsible for the day-to-day management of their project tasks.

Figure 8-1: Information Refuges and Information Spheres



Information spheres are tools that create safe and surreptitious places where the power asymmetries outside the sphere are moderated in favour of those within it (see Figure 8-1). Prior to this the refuge acts as an entrance point where the intentionality of the sphere is established its membership planned. Spheres then enable actors within the project domain to subvert the project structure by excluding those who would otherwise be key members of the project domain, including in this case, the service managers and the project sponsor, whose influence may undermine the open exchange of information and ideas as envisaged by Habermas's public spheres (Habermas 1989), Chatman's small worlds (Chatman 1999) and Burnett's information worlds (Burnett 2015).

Whilst those within information spheres make decisions about their own information behaviour; their decision making does not replace formal decision making within the project itself. As Abernethy and Vagnoni (2004) noted, the decision rights represent formal authority and the deliberate choice by senior management to delegate particular types of decisions to lower level management. Those within the information spheres have none of this formal authority, apart from that they hold as individual officers which in some cases is substantial. However, within the sphere this authority is not blunted by those outside the sphere. So, in seeking to reconstitute the

information and knowledge resources available to the project domain (including external sources), participants within the information sphere seek to re-shape the power balance and downplay the importance of referent or legitimate power (Elias 2008). As such, spheres evolve rather than being designed (Murray et al. 2004).

Aside from protecting information values, a secondary purpose of the sphere members is to convince others once they themselves have been convinced. Through this process of re-engagement sphere insiders then attempt to co-opt some members of the project board (outsiders) to bring them around to another way of thinking about the project, without other powerful voices or situational influences marginalising novel, unexpected or otherwise unwanted information.

The research suggests that the creation of information spheres is cognitively and situationally motivated. In case 1 the Project Director [R106] and Assets Director [R103] share values across 9 of 14 constructs, the most of any paring within the project domain. Yet there was no alignment of these values with any of the perceived organisational norms in the project domain, thus providing a motivation for the creation of these alternative information spaces or spheres. However, the referent power of both respondents and their affiliations with others involved in physical construction (e.g. planners, surveyors, project managers) also assisted in the creation of the spheres. This commonality may provide the basis for emerging generalised trust or propagated trust, based on their pursuit of a common instrumental rationality (Cicmil et al. 2006). This supports the Wofford et al. (1977) proposition, cited in Jablin (1987), that informal communication arises because of psychological and situational factors and because the individual's view of what constitutes salience is not in agreement with the norms and values of the organisation due to their own greater knowledge and specialised information sources.

A further motive may come down to experience of what works. For example, the Assets Director, like others in the case 1 project domain, expressed a preference for individual over collective responsibility. This did not preclude the benefits of collaboration and may have been a reflection of the need for self-efficacy in the face of norms that professed the benefits of teamwork without individuals being accountable for their actions: "I think… what the corporate type of culture does is create an environment where people aren't

accountable and responsible for things" [R106]. So, when explaining the alternative forum for information exchanges, the Assets Director [R103] noted that at

> "this particular point in this project's history people actually need to come together to find a solution. This might be completely different views from what you've got from everyone else but just drawing on my 20 years plus of actually delivering stuff plus the previous authority's experience."

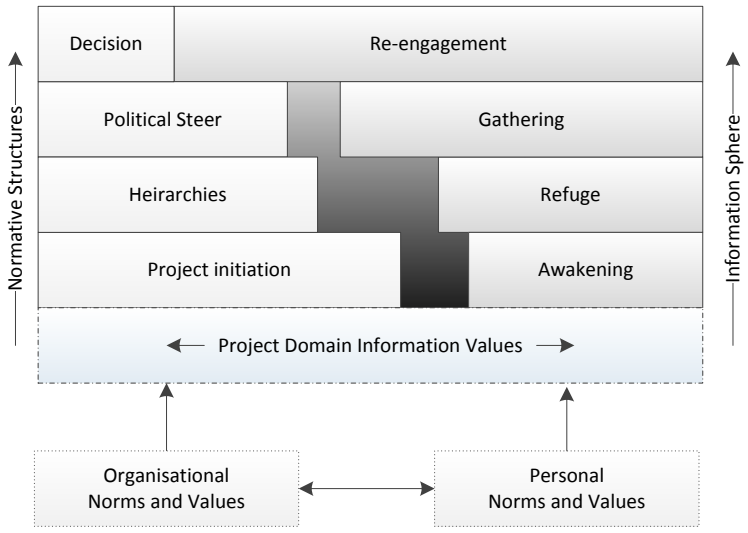


Figure 8-2: Information Scaffolding and Information Spheres

Strategic information behaviour highlights the power dynamics within the information behaviour of the project team, with power asymmetries affecting the nature of team communication and some of the conditions that affect the exchange of information within it. The operations arising from this goal-orientated behaviour lead to activities that reshape the project structures to form information spheres. The spheres affect changes within the project which are substantial, long term, and which affect others. This scaffolding facilitates exchanges that provide the basis from which to change the information values of others within the project domain (see Figure 8-2). This process is summarised below:

- Awakening - awareness of the information values / norms gap; self-efficacy threshold for action achieved
- Refuge - co-construct safe places (information structures); agree affiliations / 'insiders'
- Gathering - collaborative analysis and information exchange
- Re-engagement - changing the information behaviour outside the sphere through the step by step co-opting of 'outsiders' with the ability to influence normative structures

Information spheres recognise that their members are embedded within structures that are jointly created and from which they can detach in order to achieve wider strategic goals. This awareness, or as [R103] states, “maverick behaviour” enables actors to detach from formal project structures despite the inertia of corporate domain. Their creation may be prompted by the limited but significant power held by the actors, such as access to information and funding for experts and consultants, as in case 1. As an information tool, not envisaged by project guidance, spheres are a new organisational structure created, in part, by shifts in management power within large public organisations (Abernethy and Vagnoni 2004).

The emergence of information spheres within the project domain questions whether the project organisation can be formally constructed as a communication or decision-making structure. Like Murray et al. (2004), the research suggests that, whilst the contractual basis of many organisations dictates the formal communication processes, people and professions bring their own conceptions of the type of communication they wish to adopt, albeit adapted as they interact with others.

In seeking to understand the internal structure of organisations, Dow (1988) has identified two types of organisational structure: the configurational and coactivational. The configurational has a strong emphasis on vertical lines and hierarchies. This approach emphasises managerial authority and hierarchy and is created for pursuing predetermined organisational goals within a given environment. Like project governance frameworks, configurational structures are deliberately designed by a “dominant coalition”; they also determine the ontological validity of the information source by identifying official sources of information, who information should be sought from, and the relevance of information to those in authority.

Dow (1988) describes as 'coactivational’ the informal structures that facilitate information exchange, whilst helping to maintain the unity of the organisation and crucially a sense of personal integrity or autonomy (Smelser 1963; Johnson et al. 1995). Like information spheres, their structure is implied or inferred from recurrent patters interaction (Johnson et al. 1995). Information spheres, like coactivational structures, are also endogenous - sitting within a wider organisational setting (Dow 1988). In this situation, the information spheres facilitate communication and maintain the cohesiveness of the group, enabling those within it to maintain

their autonomy or personal integrity (Smelser 1963). This contrasts with the configurational view, which highlights the intentional design of the parent or formal project structure which may have difficulty relating to or conceiving the basis of other viewpoints – leading to tensions within the project domain (Dow 1988). A feature of configurational organisations is the retrofitting of information, as in case 1, to fit the political discourse. This lends support to other studies which have shown that deep, client-centred information values (in this case held by politicians) may overcome the integrity factor (Choo et al. 2006). Spheres perform the reverse of this by providing space for the technical sphere to emerge, at least on a temporary basis.

Thus spheres also represent an expression of self-actualisation enabled by the political tensions within the wider activity system, resulting in the need to create a space for the nurturing and protection of ideas (Beatty and Scott 2004). The project domain overlaps with that of the parent organisations, which also include elected officials. Therefore, as political influence can lead to a reification of a particular specification or approach that leaves the ability to analyse alternatives weak and lacking (Flyvbjerg 2009), it is perhaps unsurprising that those outside this overtly political world seek to pursue information exchanges which challenge the dominant political ontology.

8.3 Conclusion

Organisations are not static and when communications flow is blocked this affects how organisations are constructed (Higgins and Jessop 1965; Emmitt and Gorse 2007). The information spheres are a reaction to this barrier. The bi-polar survey helped to understand and identify the motivation and purpose of the bridging actions of the respondents and their information behaviour that sought to close the gap between the current situation and their desired outcome (Dervin and Nilan 1986).

The information exchange motive within the sphere is distinct from the information needs expressed through the formal project structures needing, for example, to inform a particular decision or to brief a particular person. The activity within the spheres seeks to bridge not only an information divide but also a conceptual one, which the normative structures cannot address at a particular time and place (Dervin 2005). In organisations, job requirements, such as the need for thorough evaluation by project staff before recommending decisions, may have a substantial effect on shaping

information seeking (Wilson 1977). The difference between the service and project paradigms means information spheres provide a mechanism for project-motivated information seeking in situations where normative (service-dominant structures) assumptions are more ready to concede strategic predetermination to political information values.

Chapter 9 - Hidden Information Behaviour

9.1 Introduction

This chapter focusses on the situations where hidden information behaviour is used within the project domain to change the discourse from information seeking to information withholding or vice versa. This can also involve the validation of contested information. Whilst strategic sharing and information withholding is widespread in organisations (Mitusch 2006), it has not been discussed in the context of early stage public projects. The instances of hidden information behaviour to finally "set the project a sail" on terms that reflect individual worldviews supports Toma and Butera (2009) assertion that rivalry leads to strategic behaviour rather than co-operation.

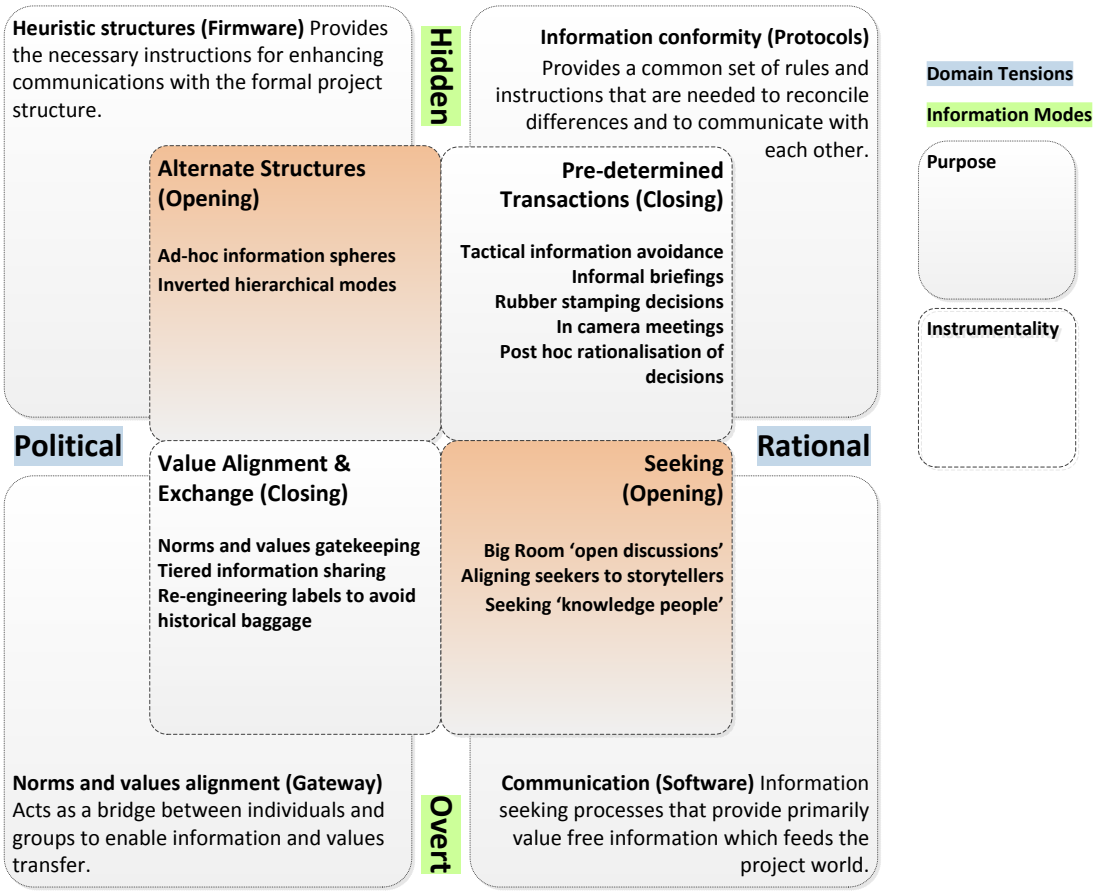


Figure 9-1: Information Practices during the Concept Stage

Within local government, where reputational damage can affect the ability to retain and enact power, there is a reluctance to acknowledge that failing

projects exist due to the risk of personal or political reputational damage (Gavett 2013). Whilst information is a central part of project management, cognitive and affect responses to organisational norms are also critical: “As you know if you’ve worked in local government, it’s very difficult to say no and to de-prioritise things” [R108]. This is reflected in a range of activities, from a lack of challenge to the actions of the project sponsor, and an inability to provide candid reports creates an environment that undermines project success, as evidenced particularly in case 1.

9.2 Hidden Information Behaviour in Context

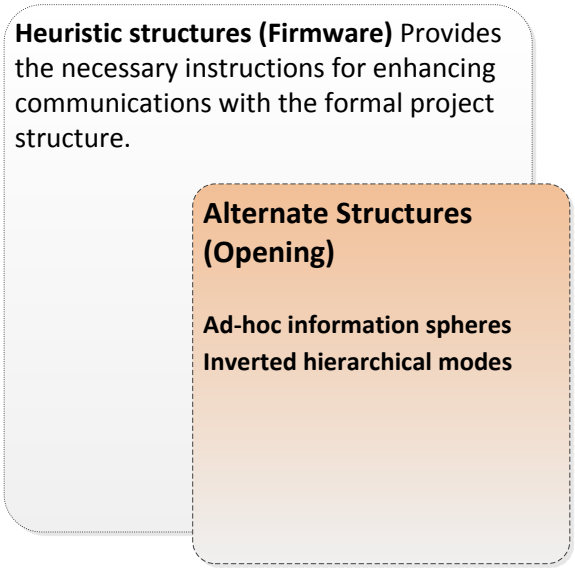
Hidden information behaviour is a part of the coping processes used by individuals and groups to deal with the lack of direction caused by unresolved tensions between the technical and socio-political spheres within the project domain. To help understand this activity which emerged from the research, a model (see Figure 9-1) has been developed to show how tensions are resolved and new information is permitted into the project domain whilst retaining its constitution. The outer squares set the context for the activity within the inner squares.

The rational actions are typified by project management processes, such as learning lessons and seeking objective information, which take place at a distance from the business-as-usual activities carried out by the parent. These activities include aligning values, creating information spheres for those with similar information values and retrofitting project information to match political objectives. The north-south axis indicates whether the activities are covert or overt. Groups within both case study authorities used overt and covert activities to manage the project process and to create environments to help deal with ambiguity or as a stratagem for achieving shared worldviews. Each element of the model is described below.

9.3 Heuristic Structures

Firmware contains the basic elementary functions to provide services to more sophisticated software. It is more temporal than hardware, which is rigid, predictable and visible - much like the normative structures within the project domain. Yet is has none of the ephemerality of software, which can be easily overwritten from experience to experience.

Within this setting, scope exists for alternative structures to be formed that provide a more efficient way of opening the project domain to new ideas and influences. These new pathways are enabled by less powerful actors in the case of information spheres, or more powerful actors with the tacit support of more senior staff within the parent organisation or project board, enabled by personal trust or expediency.



In situations where the dominant information culture does not carry sufficient weight to silence discordant voices, information spheres are created to provide safe and surreptitious places where the balance of power is slanted in favour of the group goals of the small group. The sphere allows actors to avoid sharing information using the normative communication structures. Doing this excludes powerful actors, such as the project sponsor, who might seek to suppress information they do not want to hear. The information exchange motive within the information sphere is distinct from the information needs expressed through the formal project structures needing, for example, to inform a particular decision or to brief a particular person. The spheres represent an expression of self-actualisation and are created in response to the competing political tensions within the wider activity system. This creates a safe climate for the nurturing and protection of ideas (Beatty and Scott 2004). This concept is developed in Chapter 8.

Where trust is high and micro-political tensions are limited, the project team is granted some of the powers of the project board, including informal decision rights that reduce scalar chains and improve autonomy and trust.

Project goals and objectives are not immutable, rather they are subject to organisational politics which can blunt the intentionality of the originator (Bates 2012). Whilst decision rights provide the official process of accountability, control and influence, based on scalar principles of authority, the informal authority exercised in the creation of these alternative structures is important. Instructions may be imposed by those with

legitimate power, by virtue of their position, but the achievement of these goals depends on co-operation from those lower down the organisational hierarchy (Walker and Newcombe 2000). This role of informal authority was not fully understood by the sponsor [R107] in case 1, who reflected;

> "…it always has puzzled me why some people just don't deliver when asked nicely, formally, informally, written, verbal, you know, you name it but they just don't deliver without any valid reason."

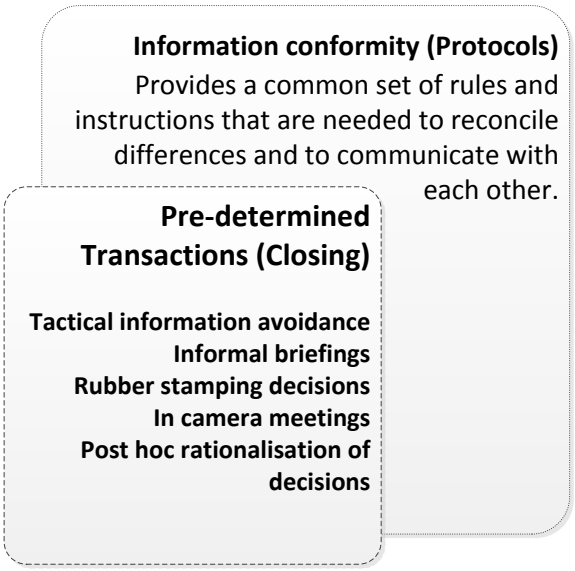
Where benevolent trust exists, further autonomy may increase this informal authority and the influence individuals have over those they interact with.

> "There are a lot of decisions taken at the Project Team level, led by [Lucy] really, cos [Lucy] got a lot of authority to basically make decisions" [R203].

Research by Murray et al. (2004) suggests that the normative project structures do not give project team members the scope to deal with the range of communication issues that arise during the course of a project. The findings of Murray et al. (2004) also question whether the structure of project organisation can be formally constructed as communication or as decision-making structures. As such, whilst the contractual basis of many organisations dictates formal communication processes, people and professions bring their own pre-conceptions of what mode of communication they wish to adopt. This may also suggest a conation, the connection of knowledge and affect to activity, leading professionals to ask particular questions about the way things are done when seeking information for a new task (du Preez and Meyer 2016).

9.4 **Information Conformity**

Protocols are a set of rules governing the format of messages sent between people, groups and information systems. By providing a common set of rules, they help to locate the meaning of information exchanges and provide a common language from which meaning can be derived. Within this quadrant, predetermined transactions fix meaning and provide a terminal point for negotiation and re-construction of the narrative.



Predetermined action within the project domain limits the exploration of a range of optimal solutions and may also impact on the conditions that affect information behaviour. These actions are normally designed to align decisions and information behaviours with the prevailing paradigm within the project domain. These activities may be very different from the normative information processes within the organisation but at certain points within the project management process the political narrative of the parent organisation will affect how the information or communications activities are undertaken. In case 1 the Head of Arts noted,

> "…but you've also got politics as well which makes it interest(ing)… it is a particular type of animal because of the different dynamics so you've got public consultation which has got its own issues around it, it's got to be in line with the local politics" [R105].

As such, whilst information seeking is still led by a professional's need to explore the full range of options, the local politics encourage project boards to privilege the political interests, rather than the professional opinion. In dysfunctional teams where trust or clear authority is lacking, this makes the project team role more of an enabling one, rather than the expert repository of domain knowledge and information seeking abilities anticipated by project method. As the project manager in case 1 put it, reports are "more based on a gut feeling of the politicians as to what they wanted and where" [R106].

The form of information withholding observed in case 1 is a part of a coping strategy, enabling project staff to reconcile the information norms and values represented by the project board on behalf of the organisation. Whilst most articles on information focus on the activity of the seeker (Savolainen 2007; Choo 2017), in project teams, much of the information seeking is done on behalf of decision-makers who are remote from the team itself. Therefore, rather than the seeker acting to avoid information, he or she is acting as an

intermediary on behalf of a decision-maker (an indirect information seeker) who wishes to avoid politically charged information, for example. The original seeker may be unaware of this avoidance. In this case, the research in case 1 suggests that this an accepted function of the need for the organisation's information values to be realised. This position may not be accepted as a desirable situation but it is not challenged directly: "I think what would be healthy is [the politicians] will listen to the business case, rather than just going for a political fixed route" [R107].

Lay (2008) has coined the term "strategic predetermination" to describe the way that information is transformed across a series of stages and reconstructed to suit particular audiences. Within a political environment, strategic predetermination is particularly important at the closing transaction phase as this is where information is prepared for or discussed as part of a decision-making process. Like strategic predetermination, information at this stage is well-planned and determined in advance to ensure that the shape and form of information and who will have access to it is known beforehand to achieve specific communicative goals.

Whilst several authors have argued that strong cultures can severely restrict the content available to those seeking information (Johnson et al. 1995), predetermination leads to filtered information sharing. This avoids the distribution of information that does not accord with the worldview of some senior actors. Conversely, confidential briefings help to share information that may be publicly unpalatable with politicians off–the-record in order to seek guidance as to how these values should be translated into action – in essence, the ontological stance of the project. When necessary, there is a post hoc rationalisation of decisions, to ensure that political determinations have an auditable trail of information and evidence.

Pre-determination also affects functional project domains where this activity is focussed more on aligning the information outputs. Specifically, it involves decisions that would normally be presented to the board being made by the project manager, then presented to the board for rubber-stamping. This activity gives the project team confidence that the board is very likely to accept its information seeking and use thus reducing the uncertainty prior to formal decisions being made at each project board meeting.

Within cognitive psychology, McLaughlin et al. (1983) have argued that

predetermining the relationship between variables reduces the cognitive effort required to handle isolated pieces of information. Accordingly, managers find dealing with related information which shares their worldview is more efficient than dealing with isolated elements arising from sources where trust or perceived competence is limited. Information overload may also exacerbate this activity.

Whilst McLaughlin et al. (1983) did not address the politicisation of information, it could be argued that information unlikely to be acceptable to the political leadership of the council can be regarded as isolated information given its lack of ontological grounding within political norms. This is because it has little relevance to bridging the situation/outcome gap within an organisation where the ontological process may privilege information in line with the expressed or implicit political information values. However, the research also suggests that information avoidance can also achieve similar objectives. Unlike information overload and information non-seeking, this coping mechanism satisfies the curiosity of the information seeker, but limits what is shared for tactical or political reasons. In this case it retains some of the fulfilment motive of the actor's own worldview whilst privileging political information over project information. As the Programme Manager in case 1 put it:

> "Project managers tend to want to write a good news story in the highlight report, not necessarily the reality. They have aversion to the colour red because that's seen as negative" [R102].

9.5 Norms and Values

Information culture is reflected in an organisation's norms and values (Choo et al. 2006; Wright 2013) which in turn shape cultural practices (Frese 2015). Norms, or descriptive norms, describe how people think and behave and how they may seek to influence or control the activities of others. Within the literature norms, are regarded as socially accepted standards that define what is regarded as normal in an organisation (Choo et al. 2006). They suggest certain activities, which when transformed into a routine become cultural practices (Frese 2015). Formal norms may be codified guidelines or policies, whilst informal norms are undocumented parts of the daily information activities within a group or organisation (Choo et al. 2008). Values are conceptions of desirable facets which guide the way social actors

act, evaluate and justify their actions. They characterise implicit or explicitly shared notions of what is desirable in society, organisations or groups (Schwartz 1999). Prevailing values may influence manager's own values and their role definitions and expectations of others (Smith et al. 2002), thus values provide the basis for specific norms that guide what is and is not appropriate in given situations (Schwartz 1999).

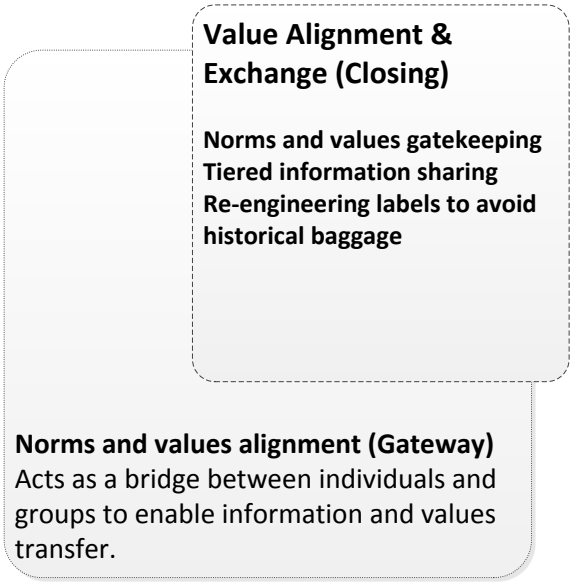
Choo et al. (2008) have argued that it is possible to systematically identify norms and values that can describe an organisation's information culture, which in turn significantly affects information use, outlook and values. Senge (2006) has defined team-alignment as having a shared purpose, vision and an ability to work together in a complimentary manner. Like most research on construction projects, the focus is on the later stages of the project and there is no definitive definition of value-alignment that relates to the concept stage and the personal and group dynamics within temporary organisations. Nonetheless, value alignment for new actors at the early stage of the project is recognised as an important factor in the creation of inter-organisational value (Matinheikki et al. 2016).

However, the research has shown that norms are not necessarily perceived in the same way and there is no absolute relationship between norms and values within imposed organisational hierarchies. These 'natural norms' should be distinguished from those imposed through contracts and policies. Nevertheless, understanding norms and values in order to encourage value-alignment between the organisation and its staff has been an important focus for research since the 1980's (Widen and Hansen 2012). The research suggests that where there is an alignment of personal values and organisational norms (including codified strategies), collaboration is improved and micro-political activity is less of a barrier to information exchange and use. As the client project manager in Case 2 noted:

> "I think the culture that [the Case 2 authority], sort of, instils in its projects, and the openness and the willingness to work in a very, very open manner with its contractors and designers and everything else, is a massive plus" [R203].

The dissonance between the certainty of control and the ambiguity of life and the way it mediates the norms and values of an organisation can profoundly affect how projects are realised, developed and evaluated (Hodgson 2004).

Given the unique nature of each project, norms and values can play a crucial role in determining success and failure. Social presence, trust and a culture of partnership working was reflected in the similarities of the bi-polar survey in case 2. The shared values illustrated in the survey and the interviews support the view of Vick et al. (2015); du Preez and Meyer (2016) that shared values promote cooperation and collaboration.



There is also evidence that an information culture sustains a particular arrangement of social and organisational arrangements (Thompson and Wildavsky 1986). This would help to explain the norms and values filtering undertaken by the functional team - given the benefits of a balanced project team dynamic as highlighted by past experience and the transcendental information required to understand the norms and values of the end users. As the Project Director put it: “Well, in one sense when you take what you had at the beginning of the project which is two sets of values that you had to bring together in order to create the new arts organisation” [R201]. This process of ensuring external organisations understand the norms and values of the council, and the creation of the transcendental project, is supported by Lai’s contention that the greater the degree of shared norms and values organisations adopt, the fewer hard coercive strategies that might, in turn, undermine partnership working (Lai 2009).

Alignment can also be achieved by creating discontinuity; the abandonment of learned norms to recreate new meanings and, by implication, a broadening or refocussing of normative information filtering, seeking, scope and purpose (Allen 1997; Davenport and Cronin 1998). Thus discontinuity can be a deliberate active, thus somewhat challenging the Dervin (1999) and Savolainen (1993) process-orientated view of information behaviour, which assumes discontinuity is a naturally occurring phenomenon. Notwithstanding this, the discontinuity can be bridged by seeking information, formulating ideas, attaining resources, and strategizing to allow

the effective use of these new ideas and resources (Yusuf et al. 2014). For example, in case 1, the programme manager sought to alter the name of the Hub project to break the connection between its history and the reification of the building and its uses by politicians and local people.

> "…I felt that [Hub name] didn't reflect the aspiration and the ambition that we were trying to achieve. It just so happened that a LB service is delivered in that building; it doesn't mean that should be the purpose of the building" [R102].

This activity is supported Head and Alford's (2015) contention that problem-solving is heavily influenced by institutional history and the perceptions of stakeholders.

When the gap between different parties has become too great, compromises are sought outside the formal board structures in an attempt to expedite the process of seeking, enabling and use of the information. This is the case even if means short-circuiting the project guidelines, for example, where the Project Director attempted to create a ready-made project vision for the client; "…but we've tried to reverse engineer a lot of stuff by writing reports and one thing I've tried to do is actually write a vision" [R106].

The links between an organisation's values and its leadership can have a significant impact on the effectiveness of organisation (Choo et al. 2006; Edwards and Turnbull 2013) and, as in Case 2, that leadership has a central role in the dissemination of norms and values (Hodgson 2004). The research also supported the view that the efficacy of the team also depends on the extent of team interdependence (Gully et al. 2001) and leadership empowerment (Srivastava et al. 2006).

In dysfunctional teams, the research suggests that senior managers have, by virtue of their position, a grasp on what the values of the project domain and parent organisation should be. As the case 1 programme manager said:

> "I think a lot of it is assumed that we would know that; I think the project team itself is quite senior… I think it's… implicit in the nature of their day jobs that they would understand those values and be quite close to them" [R102].

However, situational factors may blunt this perceived advantage. In the

functional team, whilst there is some uncertainty there is also an acknowledgement that these values stem primarily from senior officers passing down to more junior staff: “They should filter their way through down from the Project, from the Project Board, from the Joint Venture Board” [R203].

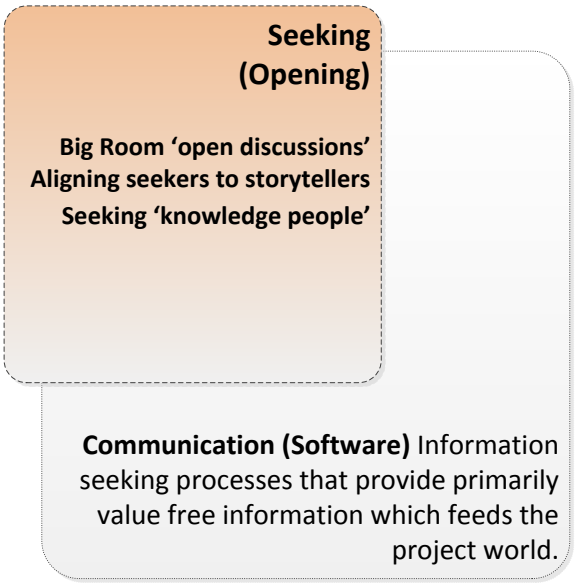
9.6 **Communication**

Values have their origins in a variety of traditions, judgements, normative assumptions and user experiences (Savolainen 1993). Whilst overtly value-laden information can help to crystallise the point of view on which information validation is to occur, this “political baggage” can also prevent useful information from being shared. No information is value-free, of course, and for many authors, knowledge and power are inseparable (Foucault 1980; Heizmann and Olsson 2015). It is generally accepted that the norms, values and processes that constitute factual information affect its production and interpretation (Introna and Whittaker 2004). Yet within this research, the search for what Habermas (1989) refers to as the public sphere is valid, represented as it is by open meetings, engagement with end users and the pursuit of the “knowledge people”. Habermas has described interaction within such spaces as independent both of state power and of corporate influence (Burnett et al. 2008). Indeed, Burnett et al. (2008) argue that public spheres help to facilitate:

- open communication
- information access
- information exchange
- the ability to find information being looked for

Price (2000) argues that there needs to be enough access to information that a rational discourse within a public space can take place. This in turn makes the pursuit of mutual benefits more likely to happen. This assumes there is one space or many spaces where the government and democratic people undertake discourse. Thus, while information is not value-free, the process of exchange and access can be enabled by attending to a variety of situational factors. These public spaces do not prevent the exchange motive being malign per se. However, the inclusion of a range of actors with knowledge and experience of different parts of the project domain helps to validate the

information by simultaneous information-exchange and corroboration on the same information ground. Whilst the polarisation of values and viewpoints is inevitable, the 'big room' information ground has a role in harnessing mutual knowledge and common understanding, providing a common ground through which interactions take place (Rohman and Pang 2015).



Creating the right environment for information seeking and exchange was important within this functional team where there was greater generalised trust, especially as the initial stages of the project were done in camera as part of negotiations with the private sector developer. Prior to the project getting formal sanction from the joint venture (JV) board, the de facto project manager organised a half-day workshop with a council user and developer stakeholders to identify barriers to the progression of the project:

> "So, we just threw on the table all the possible problems, things that might stall the project, and to that I invited, not just the key individuals involved from each organisation but people like, someone from the Treasuries Department in the Council…" [R202].

While the 'big room' approach is predicated on creating a "one-team mentality" approach to the project, it is also designed to identify problems and information needs in a timely manner. This piece of "risk analysis [took place] very early… [and identified] the key pieces of work that we might need to do" [R202]. In this instance, the multi-voicedness opens up opportunities for information structures and synergies, which increased the capacity of the project domain to find and solve problems through transcendent information gathering.

Whilst the big room represented information grounds in a group setting, on a one-to-one basis attempts are also made to find the "knowledge people"

[R101]. Pettigrew (1999) defined information grounds as a temporary environment created by the behaviour of people who come together to perform a given task, but from which emerges a social atmosphere which fosters the spontaneous and serendipitous sharing of information". Thus, choosing or creating the right environment is important when seeking information in order to offset the costs of the information provider:

> "Because they're more comfortable in their own environment and if you're asking them for information they can say, 'Oh yes, I might have got that in a file'. Whereas if they come away from their workplace they've not got that information to refer to, have they?" [R101].

In addition to creating a setting that was conducive to information exchange, both cases involved aligning those seeking information and those providing it from similar professions. This helps to support Rohman and Pang (2015) assertion that within information grounds people have to seek common ground in order to interact. Understanding this clearly permeates public organisations, with the added benefit that it can also improve the possibility of auto-validation, where the receiver has sufficient cognitive ability and domain knowledge to assess the veracity of the information that he or she is given. This attending to the person in situation also supports Harris and Dewdney's (1994) principles of information-sharing, as summarised by Worrall (2010), namely:

- information needs are situational
- individuals will focus on the most easily accessible information
- interpersonal sources are favoured
- affective needs are important
- information seekers are habitual

9.7 **Conclusion**

This chapter discussed the nature of the information behaviour and how the dynamic of generating new information and then reconciling it to the information needs of the organisation occurs. Sometimes this is overt, but when this process requires alignment with positions that are highly subjective, hidden information behaviours are used to prevent dissonance within the imaging of the public sphere and reputational damage to those

with power. This process recognises that the organisation is not a singular entity and that the notion of a project and the parent organisation is merely coincidental. The fundamental organisational relationships relate to the power over social structures and how this is affected by organisational norms and reinforced by how information is managed to retain this hegemony.

Chapter 10 - Conclusion

10.1 Introduction

The focus of this research is the information behaviour of project teams in the context of concept stage regeneration projects within local government. The information behaviour of the members of two project teams has been explored in two UK local authorities in which the situational and information values vary. This has led to the development of a model of project team information behaviour, after reflecting on the nature of the information behaviour highlighted by the research and literature.

Information behaviour and project management literature has also been reviewed to identify gaps in the knowledge. Information behaviour research has helped to shed light upon a wide range of information-related phenomena (Koh et al. 2015). However, there are significant gaps in its contribution to a nuanced treatment of context (Greifeneder 2014), social context (Vakkari 2008), power (Berryman 2006), praxis (Allen et al. 2011) and collaborative information behaviour (Hertzum 2008; Zeinali 2014).

An analysis of the literature has also highlighted the absence of research on project management within the public sector (Gomes et al. 2008) and the lack of a clear body of project management knowledge that can be transplanted from the private to the public sector (Boyne 2002). Although information behaviour research has highlighted a number of cognitive factors such as the affective, cognitive and physical experiences of information seekers (Kuhlthau et al. 1989; Kuhlthau 1991), information encountering (Erdelez 1997), incidental and serendipitous information acquisition (Toms 2000), search-chaining and scanning (Bates 1989), socio-cognitive factors such as information avoidance (Pendleton and Chatman 1998; Choo 2017) and situational influences such as 'information ground' (Fisher et al. 2004), there is a lack of information behaviour literature on the subject of information behaviour in the temporal organisations that project teams represent.

In seeking to attend to these limitations, this research makes the following contributions to both information behaviour and project management literature:

A. Identifying a model of project domain information behaviour at the concept stage and articulating the function and definition of strategic information behaviour
B. Identifying information spheres, i.e., spaces in which information can be created, exchanged, promoted and nurtured within the project domain, sheltered from disadvantageous power asymmetries and micro-politics
C. Shedding light upon hidden information behaviour within a politicised area of work and providing a "thick description" (Lincoln and Guba 1985) of micro-politics as an issue, both as context and as foreground, in the shaping of the tools and techniques used within collaborative information behaviour
D. Identifying structural tensions within public sector project teams that impact on situational and cognitive responses. These factors may affect the success or failure of projects and have not been adequately recognised within the project management literature
E. Combining CHAT with a modified version of Kelly's (1991) repertory grid technique to help identify areas of tension between activity systems and to challenge the normative assumptions about shared norms and values.

The chapter concludes with a reflection on the limitations of the research and possibility for further research.

10.2 Project Team Information Behaviour Model

Collaborative Information Behaviour (CIB) research has tended to focus on technology driven approaches to information transactions (Hyldegård 2006). However, when certain triggers activate CIB, communication and personal interaction, rather than the use of technological artefacts, are the key elements of the group dynamics (Reddy and Jansen 2008). The focus on human information behaviour as discussed in the research is important as it is still the focus of the majority of communication and information behaviour activities in practice. Whilst CIB models of professional disciplines involved in the latter stages of project exist, there is no model of early stage project team information behaviour and no model of, nor agreed definition of, strategic information behaviour (du Preez and Meyer 2016).

As such, it is imperative that research sheds light upon collaborative

information behaviour within a highly politicised area of work and to ensure that organisational norms and values and hidden motives are better understood (Widen and Hansen 2012). The model of project team information behaviour is the first model of its kind in the literature. It is also the first time that information behaviour within early stage local government projects has been researched. Given the increasing projectification of organisations and increasing use of project as a mode of operation, gaining a better understanding of CIB will help policy makers to make more informed decisions.

Importantly, the information behaviour discussed in this research is primarily strategic in its scope, affect and temporality. Historically, information behaviour research has tended to look at important but lower value, non-strategic decisions, such as incidental information seeking in beauty parlours (Fisher et al. 2004), motorway patrol stop decisions (Allen et al. 2011), small worlds of janitors and prisoners (Chatman 2000) and information seeking in libraries (Kuhlthau 2010). The information behaviour considered by this research is strategic for three reasons:

- The matters in contention affect issues of import that stretch well beyond the project team, such as decisions on location which may have major implications for budgets, who gets access to the service provided and the reputation of the council and its political leaders
- The timing of the project prior to the socio-political and technical domains determining an agreed scope and before the design freeze where the physical form and budget is agreed by the council
- Human information behaviour and organisational norms are difficult to change (Detlor 2010), strategic information behaviour seeks to affect the activities and information behaviour of others with power

The strategic nature of the information behaviour made access to the information and respondents difficult to achieve. Yet exploring an under researched area of collaborative information behaviour makes a modest but significant contribution to the canon, upon which further studies can build.

10.3 Information Spheres

Information spheres provide an alternative perspective on why and how the personal agency is used to enact collaborative information behaviour to help provide solutions to problems that are too complex or difficult for an

individual (Shah 2013). The research, in particular that informed by the failure of Case 1, extends Hart's concept of "information wards" into the study of human, rather than information, systems (Hart 1994).

These alternative structures, or information spheres can be regarded as being hidden in plain sight as they are not designed to replace the hierarchical structure of the project domain but to create a space for the nurturing of and re-creation of information in an environment insulated from the subjectivity of the political domain. The spheres may seek to bypass perceived blockages within the project structure temporarily by offering up alternative visions as a strategy for the reconstituting of knowledge and its access. Also, information may be held onto temporarily awaiting the right time for its release at a point where a more favourable and less politically driven environment is available. This activity is more noticeable within dysfunctional teams than in the functioning ones where there is an effective separation of the political and project activity.

Unlike information grounds, spheres are not serendipitous or accidental occurrences, they are created as an information tool in the absence of a clear and shared vision within the project domain. There is an element of planning and an intuitive sense that they are the right vehicle to use for the seeking and exchange of new information and to develop informational power. However, they do create a third space (Oldenburg 1999) which is neither part of the formal project structures and discourse nor part of the business–as-usual routines, so in that sense spheres are ad hoc tools, created for the special purpose or end currently under consideration.

Despite the expectation that the small worlds theory would be tested in a wider variety of settings (Pettigrew et al. 2001), this has not materialised (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 (see section 10.5). 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).

The public sphere represents a reciprocal relationship between, on the one

side the public, and on the other those who govern (Widdersheim and Koizumi 2017). The public deliberate in order to reach a shared understanding on a given situation or circumstance. On the other side are governing bodies, whose decisions and activities affect the lives of the public. They are continually scrutinised by the public and must account for their decisions or pass resolutions that reflect their concerns. The public sphere is a deliberative process which emphasises social integration and reciprocal communicative power, rather than coercive power (Widdersheim 2017).

Yet the public sphere, like project method, is limited by its false encapsulation of the ground where the engagement with government and its projects takes place. Whilst the former privileges position, the latter focusses more on the strength of the arguments. Like Habermas' "Lifeworlds", this challenge is linked to the desire for the pursuit of trust and justice within a democratic framework (Burnett et al. 2008). Organisational norms and values and micro-politics mean that information is not valued solely on the logic of the arguments being advanced or on the efficiency of information exchanges (Nowé et al. 2008).

Whilst no space within an organisational structure can ever be said to be free of (state) power and corporate influence, the public sphere approach does not take account of the fact that decisions are often not made in public, yet alone public spaces. Politicians may vote in public but in the political system decisions made at MP or councillor selection meetings or in cabinet or private briefings or through lobbying are arguably more important, less changeable and more enduring. These contradictions exist within government, despite being barely acknowledged within project method, where the information seeking, sharing and information exchange is presumed to be unfettered, providing the prescribed project management processes are followed. Whilst there may be hope that this rationale emerges this is a risky position to take, given the importance of micro-politics and the contextual impact of politics at large where decisions over scarce resources are needed.

The status of those involved in the information exchange, its settings and how the object of the activity is interpreted may be more important than the argument being advanced. Burnett et al. (2008) have acknowledged that public spheres require rational lifeworld information, but that sometimes information is introduced which is designed to coerce or colonise the public

sphere. Public spheres are regarded by Habermas as the opposite of 'colonisation', as a liberating environment where people have the chance to express their information values. Whilst public spheres require idealised conditions that may not exist within contested social environments, information spheres may be regarded as a liberating force - a sanctuary where time and space are enabled and preparation for the challenges of the political world takes place.

10.4 Hidden Information Behaviour

Collaborative information behaviour remains under-researched (Saleh and Large 2011; Foster 2006). Most information behaviour models seek general applicability (Niedźwiedzka 2003; Wilson 2007) 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 behaviours (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 et al. 2012).

Poltrock et al. (2003) have defined collaborative information behaviour as "activities that a group or team of people undertakes to identify and resolve a shared information need." The research has questioned the collaborative nature of some information behaviour. Firstly, information seeking is undertaken by individuals working alone based on their domain knowledge. Secondly, whilst most of this information is later recombined by the project team to present to the board, other information is withheld because it is not yet compatible with the prevailing normative information values. Finally, the information need is partly dictated by the parent organisation. Within the project domain this role is embodied by the project sponsor. However, the seniority of the sponsor is likely to mean they are absent from much of the information practices that constitute information behaviour and often their influence is hidden.

Whilst these findings do not represent the normative assumptions of much collaborative information behaviour, several authors have argued that there is a need for greater focus on CIB where the norms and values are important underlying factors (Hertzum 2008; Widen and Hansen 2012). This research

has contributed to that debate by its explorations of the hidden strategies and the mixed motives for sharing, rather than simply assuming a cooperative motive. The information behaviour model that has emerged during this research illustrates the importance of the contextual and situational factors that appear to initiate hidden information behaviour within local government project teams.

The research suggests that this hidden behaviour is largely prompted by situational factors and a misalignment of personal values and organisational norms. As such it enables a greater understanding of hidden information behaviour in an overlooked area of research. For the most part, these artifices are not visible as they would be politically unacceptable to a public body within a democratic setting. So despite the competing interests, organisations must at least keep up the pretence of rationality to maintain trust within the organisation and legitimacy amongst those outside it (Choo 1996).

In this case, hidden activity is merely a reflection of the information values which have come to be accepted by those within the organisation, and suspected as such by those without. As such, it challenges the notion that deception is at great risk or personal cost. Instead it reflects the anomalous behaviour as highlighted in Chatman's research and is a reflection of strategic behaviour and the coping mechanisms used to reconcile tensions within the activity systems. For the organisation's part, this is a form of autonomy which it tacitly approves but accepts no direct responsibility for. By mirroring the norms and values of the organisation, it is the release of this information to the public at large, rather than the hidden information behaviours themselves, that could put the individual at risk from those with legitimate power over them.

10.5 Micro-political activity

Power is regarded widely as a central concept within organisational analysis (Haunschild et al. 2009; Clegg and Haugaard 2009). Weber (1978) argued that power derived from the knowledge of operations within production as much as from ownership itself. Therefore, from a rational perspective power is only used when someone seeks to achieve an objective that is not in line with the organisation's norms, thus by definition making that activity, irrational (Jasperson et al. 2002). However, control is more complex and

needs to distinguish people's ability to control the methods of production as it is represented within the diverse occupations from which organisations emerge. Unlike Marx, Weber saw that strategic agency was attainable. As such, everyone has the potential to be productive in a manner that the firm wants and realising this potential for the firm is, in part, the function of management. However, actors retain the ultimate control over what they do and how; thus, the potential for resistance remains and resides in all human interaction with the organisation. Thus, as Hardy and Clegg (1996) have argued, management is continually seeking ways to affect this discretion despite self-motivation being the most effective tool for this. As a result, rules-based systems, the central tenet of Weber's bureaucracies, have been more prolific, resulting in project management systems built on a hierarchy exercised through legitimate power. Yet the recognition of power structures within project management is sporadic (Walker and Newcombe 2000).

From the perspective of the group Neuberger (1995), cited in (Winkler 2009), has described micro-politics as the range of everyday tactics with which power is constructed up and applied in order to increase the room for manoeuvre and to resist external control. Like other types of politics, micro-politics is an attempt to exert determinative influence on people and their social structures (Dörrenbächer and Geppert 2009). Within the literature, information need and the subsequent seeking processes are seen as depending on the worker's practical tasks (Byström and Järvelin 1995); other motivating factors, although present, are assumed to be limited (Elsweiler et al. 2011). Wilson's original information behaviour model identifies information need, which may be tacit, personal and ineffable, as providing the motive for potential action (Wilson 2007).

The research, within the specific context studied, adds depth and contrast to Wilson's framework, by proposing that within projects information need is also a focus of micro-politics as ambiguity can trigger information behaviours that attempt to affect the discourse in a way that satisfies personal or wider political motives (Harrison 1992; Pinto 2000). Where this bridging action, or reconciliation, within the formal project structure is frustrated, actors may engage in actions that are contrary to the information-sharing consensus envisaged by project method. The unified project objective motive for information need, as espoused by project method, is also undermined by this focus on self-actualisation in the resolution of the project-political ambiguity.

The decision to seek and refine information within spheres is deliberate and supports coping theory, in that actors are seeking to manage the contradictions and challenges provided by the relational characteristics between the actor and their environment (Folkman 1984). In this regard the principle of structural conflicts is also reflected within Wilson's (1999) information behaviour model, albeit in general terms, by the person in context variable, which suggests that other people's needs are relevant and the information need and use may be located apart from the primary user. But whilst Wilson's model reflects the plurality of information sources that may affect those with an interest in the project it is the conflict between social norms and value expectations that create the political tensions pivotal in project goals (Karlsen 2002; Cicmil and Hodgson 2006).

In her research on insiders and outsiders and the polarising intellectual structures of the information-poor, Chatman highlighted secrecy, deception and risk-taking as factors designed to restrict or enable privileged access to information (Chatman 1996). Citing Bok (1983), Chatman argued that "while all deception requires secrecy, all secrecy is not meant to deceive" (p.7). None of the case study respondents would describe the hidden activity they have witnessed as deception. But there is little doubt that some of the activity would, as Chatman posited, hinder others from making use of relevant knowledge (Chatman 1996).

What is missing from Chatman's summation is the temporality of the patterns of activity. Firstly, as in case 1, information may be temporarily held back until a more suitable time is found to reveal it. This could reflect the need to improve its salience or to wait for the validator to be in a suitable cognitive state, or for situational changes to affect that change in order for others to receive and make best use of the information provided.

Secondly, Chatman (2000) argued that public behaviours are driven by social norms and what utterances accord with the social horizons in a given environment. To that end, careful shielding of one's true self avoids calling undue attention – what Chatman calls self-protective behaviours. Whilst spheres are a reflection of these activities, Chatman downplayed the ability of those within the small world to cause changes outside it. Micro-political behaviours, including spheres, are an attempt to leverage power – albeit unrecognised by normative structures – to affect change outside the small world of the sphere in order to maintain the worldviews within it.

Thirdly, Chatman argues that norms provide the horizons of the individual's worldview and, therefore, impose a certain social control by imposing boundaries which may affect a person's whole life (Chatman 2000). Whilst Chatman noted that these norms set out what is and is not important, indicating that worldviews can be changed, there was little attention to how this could be achieved. The research shows that small worlds can simultaneously affect the boundaries by using micro-political activity, and in particular the hidden activity, to reinforce organisational norms whilst at the same time using similar strategies to change others' worldview through spheres and strategic information behaviour.

Notwithstanding the attempts to reimagine the subject, project management theory and formal methodology are still based on the classical hegemony (Cicmil and Hodgson 2006). This approach is embedded within rational theories of power, providing a universal and deterministic model which emphasises planning and control uncertainty (Svejvig and Andersen 2015). This assumes that the organisation has determined a rational set of objectives that members of the project team will seek to undertake. However, project management, and indeed research in its wider sense, must take account of the mechanisms through which power takes effect and makes its influence felt (Faludi and Van Der Valk 2001).

10.6 **Project Management**

Thus, despite the achievements of the Making Projects Critical literature, plan-orientated rational action is a fundamental principle of management and professional work in Western cultures (Svejvig and Andersen 2015; Böhle et al. 2016). As such, project management literature has tended to assume that all projects are fundamentally analogous, highlighting a standard set of activities such as planning, design, monitoring and risk management (Cleland 1990; Pollack 2007; Pinto and Winch 2016), whilst largely failing to attend to early stage project activity (Morris 2013). In practice, however, there is considerable variation in project practice (Shenhar and Dvir 1996; Bakhshi et al. 2016) and paradigms (Pollack 2007). The importance of the early stages to project development is also critical (Artto et al. 2016; Samset and Volden 2016). Unless this misconception is resolved, it will hinder efforts to develop the theory and a realistic contribution to the understanding of praxis (Samset and Volden 2016). In

seeking to understand the role of strategic information behaviour within these teams, the research seeks to go beyond the traditional and limited view of information as being an explicit, if partial, statement of knowledge to encompass implicit information as an essential component of collaborative endeavours and any activity involving communication between groups. Several authors have acknowledged the need for a project management approach which helps to design the arrangement between organisations for mutual benefit as adaptive self-organised systems (Edson 2011; Bakhshi et al. 2016).

However, project management tools within political environments need to adapt to the nature of the organisation's needs to find a better way of separating the two competing ontologies (Linehan and Kavanagh 2006). Projects, workplaces and social activity in general involve contested and cooperative processes for allocating scarce resources and exercising power as a form of organisational politics. But whilst organisational politics is group behaviour (Cacciattolo 2014), project management literature has neglected the institutional environment whilst practice has adapted little to politics and power (Svejvig and Andersen 2015). Given the increasing 'projectification' of organisations and daily life around the world (Jensen et al. 2016) and the gap between imagined and finished projects, including the failures, there is a need to understand how SIB and CIB might shed light upon projects by developing a model of project team information behaviour.

The research suggests that project management must pay closer attention to individual values and domain norms to enable the potential of the team to be leveraged toward creating a more effective collaborative unit. The hidden and micro-political activity observed by the research does not suggest ill-intent on behalf of the actors, but an aligning action to bridge the cognitive gap between organisational norms and personal values (whether internal or external).

Interestingly, the research also shows that there are other coping mechanisms, such as the withholding of information until a more rational climate prevails, and the creation of new structures and information spheres which also seek to keep alive a more rational approach to complex problems. It suggests that non-rational activity is institutionalised and an accepted part of the application of the organisational norms associated with working in contested political environments. Although this normalisation of deviance

within project management has been recognised previously (Pinto 2014), it has not focussed on intra-organisational tensions involving early stage projects. The research also suggests that there is a subtler acceptance of aberrant activity which is perhaps counterbalanced by the creation of refuges and information spheres.

The model of information behaviour may also assist project management literature attend to the tripartite project; the formal project itself; the on-going needs of the users (and parent organisation if separate); and the project team. The importance of personal values and organisational norms in creating the space for, and motivating the use of, informal authority has had limited consideration within the project management canon and none in the situational context explored by this research. By gaining an improved understanding of these informal processes, project management may better address the actuality of projects. In particular, this could help achieve a closer alignment of norms and values at the outset of the project by providing an authentic appraisal of the situational factors that help to reduce costly project failure later in the process.

10.7 Cultural Historical Activity Theory and Repertory Grid Technique

Cultural Historical Activity Theory (CHAT) is used in tandem with a modified version of Kelly's (1991) repertory grid technique to help identify hidden motives and tensions within and between activity systems. Whilst the use of patterns with CHAT has been used to support evaluation (Guy 2005), the two methodologies have not been evidenced in tandem within the literature and, therefore, the theoretical contribution was their use as a complimentary analytical device to foreground important concepts (norms and values) as motivating factors.

CHAT provides a framework for analysing professional work practices (Julkunen 2011). It 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 et al. 2011). Within CHAT, the need to adjust collective actions arises because of contradictions within the activity system or, to a certain degree, an inner tension (Sannino et al. 2009). The use of the bi-polar

surveys focused the research and informed the nature of the tensions within the project domain as a potential motive for particular micro-political activity.

This is significant because CHAT has been criticised for its lack of ability to deal with political behaviours (Langemeyer and Roth 2006). Nunez (2014) has also described CHAT as too societally based, failing to take proper account of individual drivers and the lived experiences of actors that come from outside the domain being explored by CHAT. Whilst the research provided little insight into the actors' lived experience outside work, the bi-polar analysis was able to provide insights into some of the fundamental beliefs of each actor which influenced their role in the tensions, contradictions or congruencies, within the activity system.

The Repertory Grid based surveys also provided a bridge between CHAT and Critical Realism. Within Critical Realism, the sequence of description, retrodiction, elimination and identification is aided by the ability to refine retrodiction and the identification of motive and causal effects. Understanding of these intrinsic structures, that reflect the history and the properties which combine to provide the emergent activity, is essential in theory building.

Thus, the dysfunction in case 1 suggests a process of retroduction that might include envisaging a situation where power is personal and should be ascribed to experiences and a lack of hierarchy. Instead, the bi-polar points to some respect for hierarchy and structures, albeit not necessarily existing ones. For example, despite the dysfunction there was agreement that power should come from position, profession or grade, rather than experience and capabilities, in both the project team and board. This recognition of social structures and defined roles suggests a recognition that position confers particular enablements and constraints. This finding lends weight to the notion that the information spheres do not seek to overturn existing structures but to bypass existing blockages, providing room for discourse before returning to seek to influence existing board members. Despite this recognition of these hierarchical structures, the hidden activity also suggests a certain distance and relative autonomy between structure and social activity (Allen et al. 2013).

Agreed norms are not a precursor for group formation. The bi-polar

questions used in the research regard the respondents “as should be” responses as representing their values whilst the respondents’ “as is” responses represent the current norms within the organisation. Most current definitions of norms follow closely that used by Chatman (1991). Luckmann (1970), also cited by Chatman (1999), stresses the importance of shared beliefs and acting within generally recognised “norms and expectations that emanated from the common worldview” (Luckmann 1970, p. 581–582). Burnett follows a similar approach with the concept of information values, which renamed Chatman’s worldview to propose each information world had its own agreed upon metric of differentiating between different types of information and the values accorded to them (Burnett 2015).

However, the research found that whilst norms may aggregate the practices of many people, each person perceives those norms through their own cognitive, affective and physical lens. Small worlds theory is limited by its lack of intertwining as in practice most organisations are a coalition of groups, hence the Chatman/Luckmann definition of self-defining norms is challenged when groups are imposed, for example in local government bureaucracies with their hierarchical systems of management and control. Also, over the course of time people migrate from group to group, bringing some of “what was” to “what is”, revealing norms to be transient. There is no automatic reason why norms are defined by shared beliefs within a professional, vertically structured organisation, as shown in case 1 which revealed competition between groups with different values. Combining CHAT and Bi-Polar enabled the potential role of norms and value divergence to be hinted at, as the externalisation of internal values was reflected in the bi-polar data. CHAT expects tensions within activity systems, but much information literature presupposes Chatman’s social construction of knowledge and therefore shared norms and values. But the reality is that we do not have a common understanding of norms.

10.8 Research Limitations

The bi-polar survey was designed to quantify the degree of similarity or disparity between different personal values and perceived organisational norms in order to better understand the cognitive influences, situational tensions and the motivations of actors. Because the numbers interviewed were limited, a narrative scale provided more utility where the numbers were

converted to statements (see Section 4.3). This was useful but not ideal.

The exploratory nature of the research would have benefitted from a longitudinal study to further explore some of the concepts emerging from the research. However, time constraints on both the researcher and case study authorities limited the ability to gain similar access for a second round of interviews.

The research does not specifically address the role of other participants within the wider project domain, including politicians, who could have given direct access to the intra-political group factors behind some of the structural tensions arising in both cases. However, this involvement may have been very difficult given some of the controversial matters discussed and would have undoubtedly led to some of those interviewed for this research refusing to participate.

Whilst some time was spent in the office of the actors and at the project sites, attendance at key meetings would have given a more rounded assessment of how implicit knowledge was utilised in pursuit of each partner's goals. This would have also provided further insight into the power relations between the different partners and their norms. However, this was not permitted due to the sensitivities of other actors and organisations affected by the projects.

The models developed in this research are intended to have application within the context studied, namely concept stage project teams within local government. However, in so far as generalisations are possible, the research seeks to provide an epistemological fit with the readers' experience in order to enable a natural basis for generalisation (Stake 1978). Thus, readers may draw lessons from the findings, when placed in a context or form that they are familiar with, and interpret them in the light of their own situation (Lincoln and Guba 1985).

10.9 Further Research

An action research method would have provided more utility for the case study authorities and may have increased the likelihood of more extensive access to meetings and confidential data. However, it was important to explore the subject initially. Now this has been accomplished other methods can be attempted in order to build on the research within this thesis. In

addition, there is an opportunity to explore information behaviour and the role of hierarchies in shaping the nature of that activity within an organisational setting. The finding of information spheres should also be tested in different contexts to better understand the political process and the wider situational variables that shape and sustain them. Finally, the research could be used to help develop a model for early warning and risk mitigation at the concept stage, in advance of any substantial investments during the subsequent design and procurement phases. In developing these research propositions, longitudinal data collection should also be considered, as suggested in section 10.8.

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List of Appendices

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Appendix 1: Project team interview schedule

- INTERVIEW SCHEDULE (PROJECT TEAM)

Preamble Thanks for agreeing to be interviewed about your work on the central library project. The aim of the research is to identify the factors that influence how project teams identify, search, use or transfer information. Did you receive the participant consent form and FAQ's? Are you okay to sign the consent form? This interview is confidential and I expect it to last about 50-60 minutes. There are no right or wrong answers. Were there any questions? Are you okay for me to record the interview? Thanks, we'll start now. Please say if anything is unclear.
Definitions Behaviour A response of an individual or group to an action, environment, person or stimulus. Belief Assumptions and convictions that are held to be true, by an individual or a group, regarding concepts, events, people, and things. Concepts The reasoning behind an idea, strategy, or proposal with particular emphasis placed on the benefits brought on by that idea. Culture

Broadly speaking the social heritage of a group. It is a pattern of responses discovered, developed, or invented during the group's history of handling problems which arise from interactions among its members, and between them and their environment. These responses are considered the correct way to perceive, feel, think, and act, and are passed on to the new members through immersion and teaching. Culture determines what is acceptable or unacceptable, important or unimportant, right or wrong, workable or unworkable. It encompasses all learned and shared, explicit or tacit, assumptions, beliefs, knowledge, norms, and values, as well as attitudes, behaviour, dress, and language.

Information Behaviour

The study of how people need, seek, give and use information in different contexts.

Source: Pettigrew, Fidel and Bruce (2001)

Initiative

An individual or group's action that begins a process, often done without direct managerial influence.

Social Heritage

The entire inherited pattern of cultural activity present in a society or group.

Source: http://dictionary.reference.com

Values

Important and enduring beliefs or ideals shared by the members of a culture about what is good or desirable and what is not. Values exert major influence on the behaviour of an individual and serve as broad guidelines in all situations.

All sources except where stated: http://www.businessdictionary.com

SECTION A: BIOGRAPHY AND SCOPING

#	Question	Observation and Notes
A1 A1.1	What is your 'day job'? How long have you been doing it?	
A2	How did you get involved in the project?	
A3 A3.1	What is your role in the project? What are your main challenges?	
A4	What are the roles of the project team members?	
A5	Were they known to each other before the project began?	
A6	Is everyone familiar with the project management method being used?	
A7 A7.1	What stage is the project at? What is the relationship between the project board and the project team?	

Now I want to ask, in a little more depth, about your use of information during decision-making.

SECTION B: INFORMATION BEHAVIOUR PROJECT TEAM

Please can you think of a critical decision that the project team made or substantially influenced over the past 2 months? Does anything come to mind? Okay, I am going to ask you to take me through the events before and after that decision.		
#	Question	Observation and Notes
B1. B1.1 B1.2	Can you tell me about the decision? Why was it critical? How clear was the need for the decision?	
B2.1 B2.2 B2.3 B2.4	What did you do to find the information needed to make the decision? Why did you choose those information sources? Did you encounter any barriers? How did you deal with them?	
B3.	How did the physical location of the information or the people with access to it affect your actions?	
B4. B4.1 B4.2	Which actions were done by you and your colleagues working together? Was working together important?	

	Why was it important?	
B5.	How did you ensure that others understood the decision and the information used to support it?	
B6. B6.1	Were the actions you outlined primarily guided by project management processes or by what you felt was right? Can you expand on that?	

SECTION C: INFORMATION BEHAVIOUR PROJECT DOMAIN

I am now going to ask you about the project team and other stakeholders involved in the project. Thinking about your experience during this project can you please tell me…		
#	Question	Observation and Notes
C1 C1.1 C1.2 C1.3	How would you define the sponsor's values in relation to this project? How are these values made apparent to you? To what extent are these values reflected in the project team's decisions? How are any tensions between the values of the project team and the project sponsor resolved?	
C2	When a decision has been taken at some point in this project, is it generally the result of a consensus	

	among the project team?			
C2.1 C2.2	How is that consensus reached? When a consensus can't be reached, how is the decision made?	C2.3 C2.4 C2.5	Why is that approach taken? Is that the normal approach? Why use it in this particular instance?	
C3 C3.1 C3.2	At this stage of the project, what scope is there for the project team to use its initiative? Do you have any examples of what would prompt this response? What have been the limitations on the team's ability to make decisions?			
C4 C4.1	Has the history of [the central library] posed any particular challenges for the project team? (How) has this affected how the team communicates with stakeholders?			
C5	Apart from the project team and project sponsor, who determines whether the project is being			

	developed successfully?	
C5.1	How do they signal their views to the project team?	
C5.2	During decision making how do you judge what weight to give to their views, in comparison with those of the project team and project sponsor?	
C6	How does the culture of the council affect the project team's ability to deliver the project successfully?	
C6.1	When new non-council partners join the project team, how do you expect the culture of the team to change?	

Is there anything you would like to add?

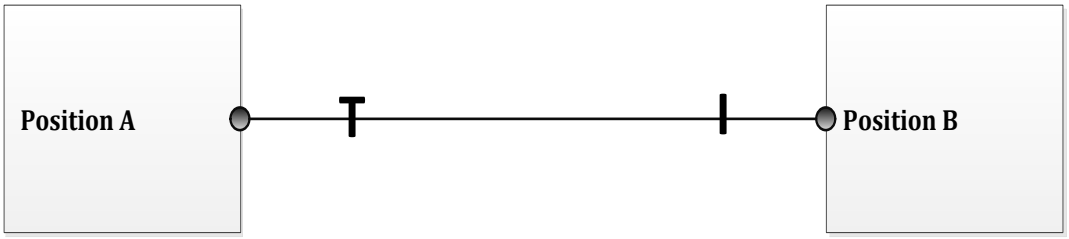
Finally, do you mind completing the following brief survey?

SECTION D: BI-POLAR SURVEY

For each of the statements in the following boxes can you please...

1. place an '**T**' on the line near to the statement that best reflects **what happens within the team** – the closer you place the 'T' to the statement the more the teams actions reflect it.
2. place an '**I**' on the line near to **the statement that reflects what you think should happen** – the closer you place the 'I' to the statement the more that you agree with it.

So for example if the teams actions were close to position A and you thought they should be closer to position B you might respond in the following way.



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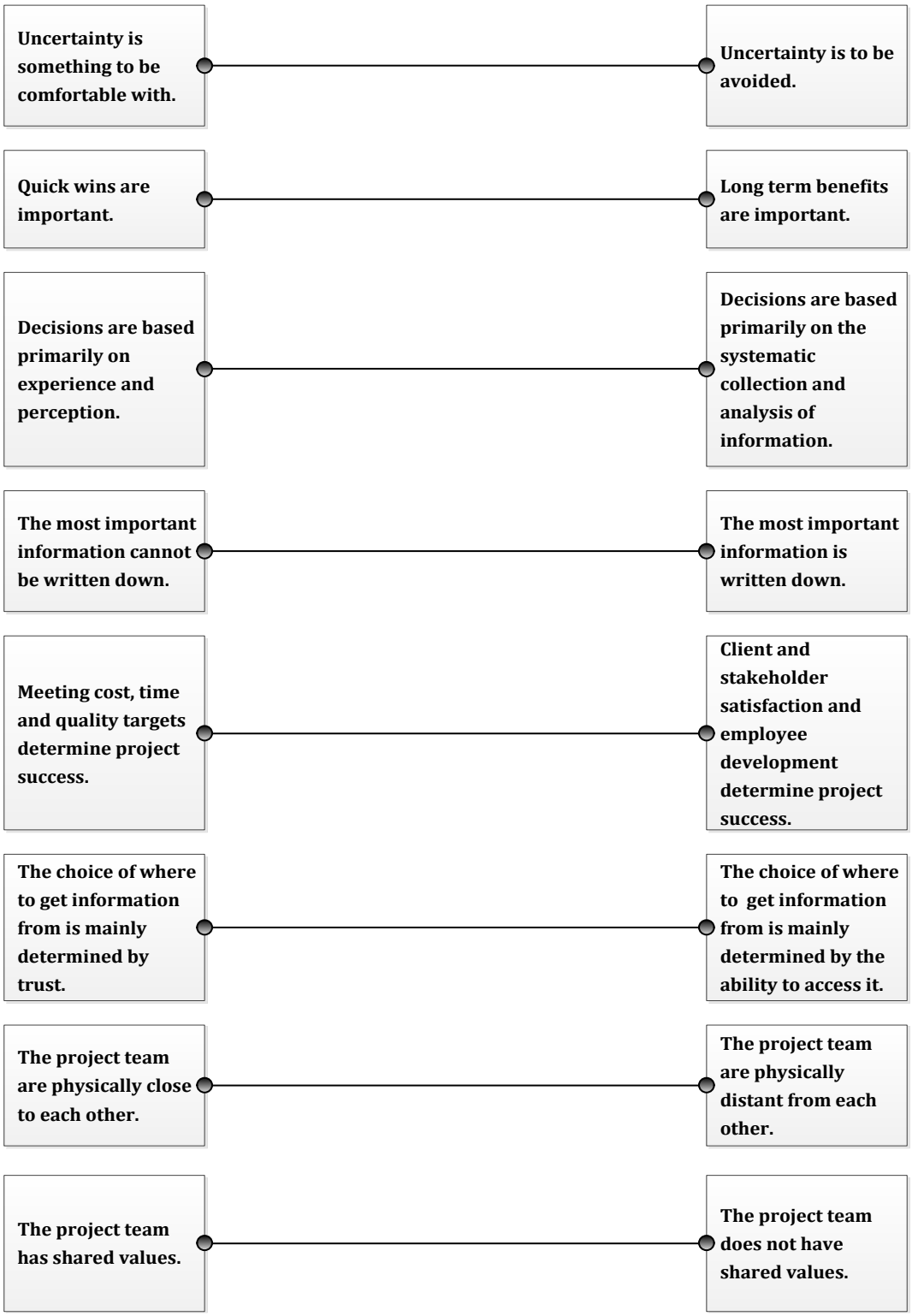
Power within the team comes from your position, profession or grade.	**Power within the team comes from your experience and capabilities.**
The team has the authority to act autonomously	**The team's activities are controlled externally**
The achievement of the project objectives depend primarily on the actions of <u>individual</u> members of the team	**The achievement of the project objectives depend primarily on the <u>collective</u> action of the team**
The professional backgrounds of project team members is diverse	**The professional backgrounds of project team members is not diverse**
Achievement of the project milestones is paramount	**Achievement of good working relationships is paramount**
The project team members were self selecting	**The project team members were chosen by those outside it**



Thanks for taking part in the interview process.

Appendix 2: Project board interview schedule

- INTERVIEW SCHEDULE (PROJECT BOARD / DOMAIN)

Preamble Thanks for agreeing to be interviewed about your work on the central library project. The aim of the research is to identify the factors that influence how project teams and the wider project domain identify, search, use or transfer information. Did you receive the participant consent form and FAQ's? Are you okay to sign the consent form? This interview is confidential and I expect it to last about 50-60 minutes. There are no right or wrong answers. Were there any questions? Are you okay for me to record the interview? Thanks, we'll start now. Please say if anything is unclear.
Definitions Behaviour A response of an individual or group to an action ,environment, person or stimulus. Belief Assumptions and convictions that are held to be true, by an individual or a group, regarding concepts, events, people, and things. Concepts The reasoning behind an idea, strategy, or proposal with particular emphasis placed on the benefits brought on by that idea.

Culture

Broadly speaking the social heritage of a group. It is a pattern of responses discovered, developed, or invented during the group's history of handling problems which arise from interactions among its members, and between them and their environment. These responses are considered the correct way to perceive, feel, think, and act, and are passed on to the new members through immersion and teaching. Culture determines what is acceptable or unacceptable, important or unimportant, right or wrong, workable or unworkable. It encompasses all learned and shared, explicit or tacit, assumptions, beliefs, knowledge, norms, and values, as well as attitudes, behaviour, dress, and language.

Information Behaviour

The study of how people need, seek, give and use information in different contexts. Source: Pettigrew, Fidel and Bruce (2001)

Initiative

An individual or group's action that begins a process, often done without direct managerial influence.

Social Heritage

The entire inherited pattern of cultural activity present in a society or group. Source: http://dictionary.reference.com

Values

Important and enduring beliefs or ideals shared by the members of a culture about what is good or desirable and what is not. Values exert major influence on the behaviour of an individual and serve as broad guidelines in all situations.

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SECTION A: BIOGRAPHY AND SCOPING

#	Question	Observation and Notes
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A3 A3.1	What is your role in the project? What are your main challenges?	
A4	What are the roles of the project board members?	
A5	Were they known to each other before the project began?	
A6	Is everyone familiar with the project management method being used?	
A7 A7.1	What stage is the project at? How would you describe the relationship between the project board and the project team?	

Now I want to ask, in a little more depth, about your use of information during decision-making.

SECTION B: INFORMATION BEHAVIOUR PROJECT BOARD

Please can you think of a critical decision that the project board made or substantially influenced over the past 2 months? Does anything come to mind? Okay, I am going to ask you to take me through the events before and after that decision.		
#	Question	Observation and Notes
B1. B1.1 B1.2	Can you tell me about the decision? Why was it critical? How clear was the need for the decision?	
B2.1 B2.2 B2.3 B2.4 B2.5	What was the role of the project team in informing that decision? What other information sources did you use? Why did you choose those sources? Did you encounter any barriers? How did you deal with them?	
B3. B3.1	What role did your own service play in informing that decision? How did this affect how you evaluated the information they provided to help make the decision?	
B4. B4.1	Which actions were done by you and your colleagues working together? Was working together important?	

B4.2	Why was it important?	
B5.	How did you ensure that others outside the project board understood the decision and the information used to support it?	
B6. B6.1	Were the actions you outlined primarily guided by project management processes or by what you felt was right? Can you expand on that?	

SECTION C: INFORMATION BEHAVIOUR PROJECT DOMAIN

I am now going to ask you about the project board and other stakeholders involved in the project. Thinking about your experience during this project can you please tell me…		
#	Question	Observation and Notes
C1 C1.1 C1.2 C1.3	How would you define the council's values in relation to this project? How does the project board make these values apparent to the project team? To what extent are these values reflected in the project boards' decisions? How are any tensions between the values of the project board and the project sponsor resolved?	
C2	When a decision has been taken at some point in this project, is it generally the	

	result of a consensus among the project board?			
C2.1 C2.2	How is that consensus reached? When a consensus can't be reached, how is the decision made?	C2.3 C2.4 C2.5	Why is that approach taken? Is that the normal approach? Why use it in this particular instance?	
C3 C3.1 C3.2 C3.3	At this stage of the project, what scope is there for the project team to use its initiative? What are the limits? How has the project board communicated these to the project team? What have been the limitations on the board's ability to make decisions?			
C4 C4.1	Has the history of [the central library] posed any particular challenges for the project board? How has this affected the guidance given to the project team by the project board?			
C5	Apart from the project board, who determines whether the project is being developed successfully?			

C5.1 C5.2	During decision making how do you judge what weight to give to their views, in comparison with those of the project team and project sponsor? How are these views made clear to the project team?	
C6 C6.1 C6.2	Can you describe the political environment in which your service works? Does the project team need to understand this? How do you ensure that they do?	
C7 C7.1 C7.2	How does the culture of the council affect the project board's ability to deliver the project successfully? When new non-council partners join the project board, how do you expect the culture of the project board to change? How will this affect the relationship with the project team?	

Is there anything you would like to add?

Finally, do you mind completing the following brief survey?

SECTION D: BI-POLAR SURVEY (DOMAIN)

For each of the statements in the following boxes can you please...

1. place an '**T**' on the line near to the statement that best reflects **what happens within the board** – the closer you place the 'T' to the statement the more the teams actions reflect it.
2. place an '**I**' on the line near to **the statement that reflects what you think should happen** – the closer you place the 'I' to the statement the more that you agree with it.

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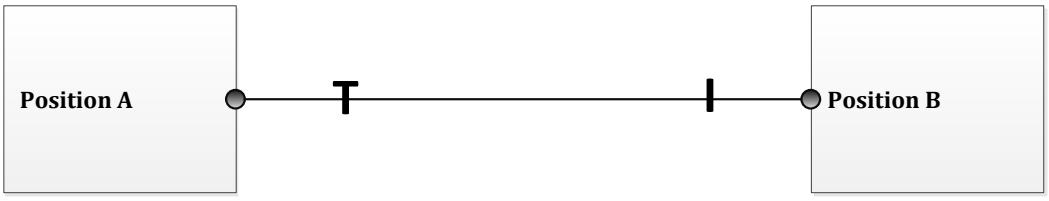

SECTION D: BI-POLAR SURVEY

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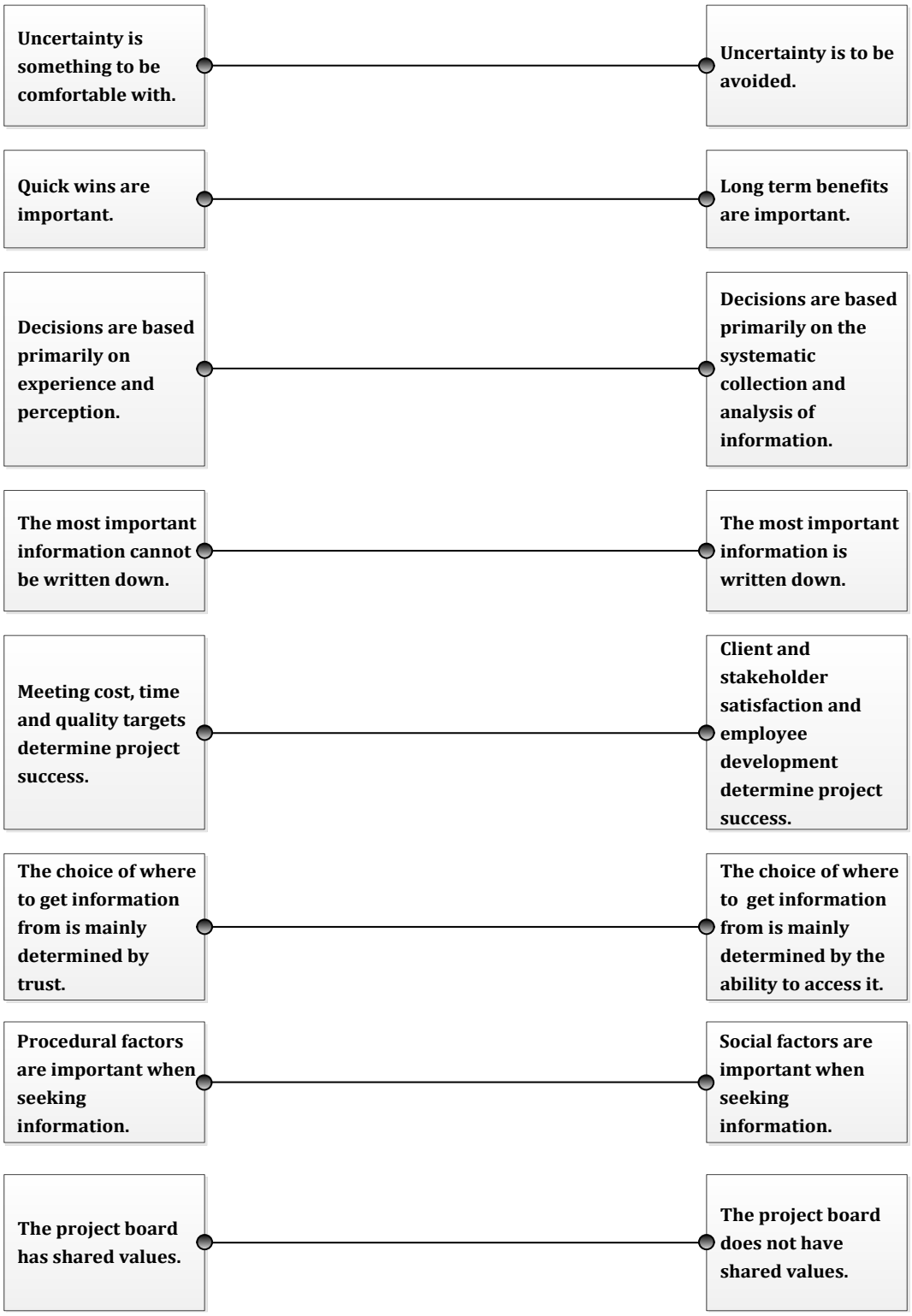
Power within the board comes from your position, profession or grade.	**Power within the board comes from your experience and capabilities.**
The board has the authority to act autonomously.	**The board's activities are controlled externally.**
The achievement of the project objectives depend primarily on the actions of individual members of the board.	**The achievement of the project objectives depend primarily on the collective action of the board.**
The professional backgrounds of project board members is diverse.	**The professional backgrounds of project board members is not diverse.**
Achievement of the project milestones is paramount.	**Achievement of good working relationships is paramount.**
The project board provides governance for the project team.	**The project board provides support for the project team.**



Thanks for taking part in the interview process.

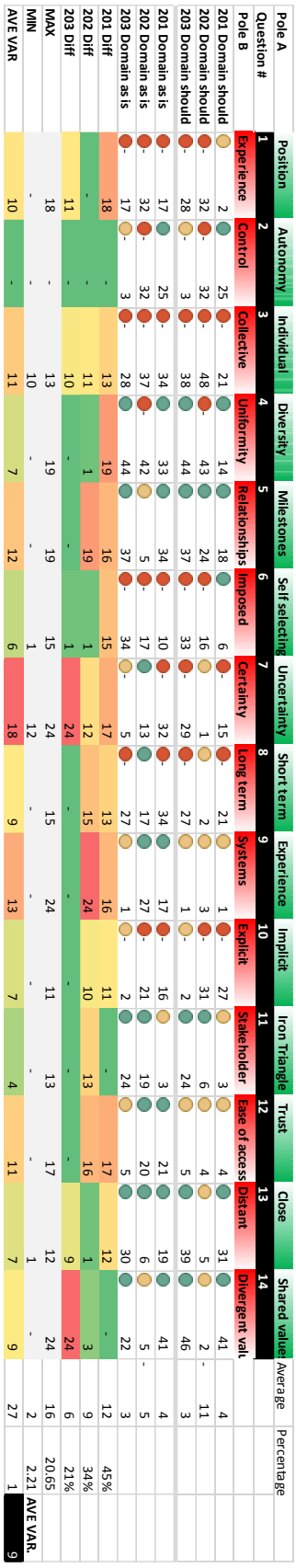
Appendix 3: Case 1 Bi-polar results

Pole A	Position	Autonomy	Individual	Diversity	Milestones	Self selecting	Uncertainty	Short term	Experience	Implicit	Iron Triangle	Trust	Close	Shared value	Average	Percentage
Question #	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
Pole B	Experience	Control	Collective	Uniformity	Relationships	Imposed	Certainty	Long term	Systems	Explicit	Stakeholder	Ease of access	Distant	Divergent valu		
101 Domain should	38	25	43	32	27	9	1	34	38	7	44	3	21	34	12	
104 Domain should	40	4	40	30	32	4	3	38	41	40	4	33	5	8	11	
105 Domain should	15	3	31	38	4	10	26	15	15	23	31	25	1	16	2	
101 Domain as is	12	41	28	42	30	17	4	22	7	4	42	14	28	42	16	
104 Domain as is	35	12	21	26	6	39	39	25	13	27	27	40	42	18	22	
105 Domain as is	15	25	21	41	38	35	1	10	36	35	5	16	4	29	0	
101 Diff	49	65	15	10	56	25	4	55	31	3	85	16	7	8	31	40%
104 Diff	5	15	19	55	26	42	41	62	28	13	30	7	46	10	29	37%
105 Diff	29	22	10	3	34	25	26	24	21	12	26	9	3	13	18	24%
MAX	49	65	19	55	56	42	41	62	31	13	85	16	46	13	42	54.65
MIN	5	15	10	3	26	25	4	24	21	3	26	7	3	8	13	16.59
AVE VAR	28	34	15	23	39	31	24	47	27	9	47	11	19	10	78	1

Position	Autonomy	Individual	Diversity	Milestones	Self selecting	Uncertainty	Short term	Experience	Implicit	Iron Triangle	Trust	Proceedure	Shared value	Average	Percentage
Pole A	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
Question #	Experience	Control	Collective	Uniformity	Relationships	Imposed	Certainty	Long term	Systems	Explicit	Stakeholder	Ease of access	Social factors	Divergent valu		
Pole B																
102 Domain should	43	33	23	37	3	40	38	42	36	38	32	3	7	26	1	
103 Domain should	24	32	31	34	4	30	22	30	17	29	4	35	5	18	13	
106 Domain should	41	18	33	35	14	1	41	39	21	32	5	35	2	40	4	
107 Domain should	33	36	30	40	35	32	31	28	22	39	37	50	2	42	1	
102 Domain as is	35	42	36	7	6	16	23	37	28	5	4	11	13	15	11	
103 Domain as is	33	37	40	42	3	27	23	24	9	22	2	28	1	15	6	
106 Domain as is	27	20	38	40	4	21	16	32	21	32	40	27	38	43	1	
107 Domain as is	13	24	28	33	21	8	27	23	19	18	14	50	5	25	6	
102 Diff	77	9	58	43	8	55	60	78	63	42	35	13	19	11	41	35%
103 Diff	9	68	9	8	6	56	44	6	8	7	5	7	5	32	19	16%
106 Diff	67	37	70	5	17	21	56	7	41	63	35	61	36	82	43	36%
107 Diff	20	12	57	7	14	24	4	5	3	21	23	-	3	17	15	13%
MAX	77	68	70	43	17	56	60	78	63	63	35	61	36	82	58	49%
MIN	9	9	9	5	6	21	4	5	3	7	5	-	3	11	7	6%
AVE VAR	43	32	49	16	11	39	41	24	29	33	25	20	16	36	118	1

AVE VAR.
29

Appendix 4: Case 2 Bi-polar results



Appendix 5: Participant Project Plan

Project Plan

Proposed Project:	Research into the information behaviour of construction project teams
Activity:	Data Collection
Method:	Case study

Service:	Leeds University Business School
Researcher:	Franklin Riley

Date:	
Status:	Release Version

1. What is the project, what will it achieve, what are the benefits and outcomes?

Research from a plethora of post war academic studies and government funded inquiries has highlighted the importance of communication and team working in the efficient delivery of construction projects. However, whilst the UK construction sector has been a major adopter of ICT and other information management tools in an attempt to minimise the uncertainty inherent in these interactions each project is unique in its form, context and in the way teams collaborate to identify information and to create meaning from it. As such it is becoming increasingly recognised that metrics alone

cannot address the need for continuous improvements in project outcomes and that social activity also has a key role to play.

This research project seeks to explore how these social processes affect the ability of the project team to create, retrieve, use and give meaning to the one chargeable item produced by the project team, namely information. Specifically, the project will explore the information behaviour of project teams engaged in construction projects involving local government.

Information behaviour consists of those activities that a person may engage in when identifying his or her own needs for information, searching for such information in any way, and using or transferring that information. As such information behaviour is central to the way that teams develop heuristic experience-based techniques for problem solving, learning, and decision making during project development.

The remainder of this project plan focuses on the data collection methods used and the nature of the interfaces between the researcher and the case study organisations. The data collection activity involves undertaking exploratory case studies based on project teams where the local authority acts as client. The main method of data collection is via interviews, documentary analysis and some limited ethnographic observation. In the analysis of the data the researcher will explore how information behaviour is used to mediate the interactions between the project team and the project itself and to illuminate how contradictions within the project domain are addressed by this behaviour to create shared meaning and co-ordinated action between its members.

2. Why is the project needed?

Central and local government spending accounts for about 40% of all construction by output and through its other financial and regulatory relationships with the private sector the government, both national and local, exerts a major influence on every aspect of construction project management. Notwithstanding this there have only been limited research efforts aimed at understanding the nature of construction project management activities within local government.

The need for a greater understanding of project activity within local government is also highlighted by the government's recent announcement

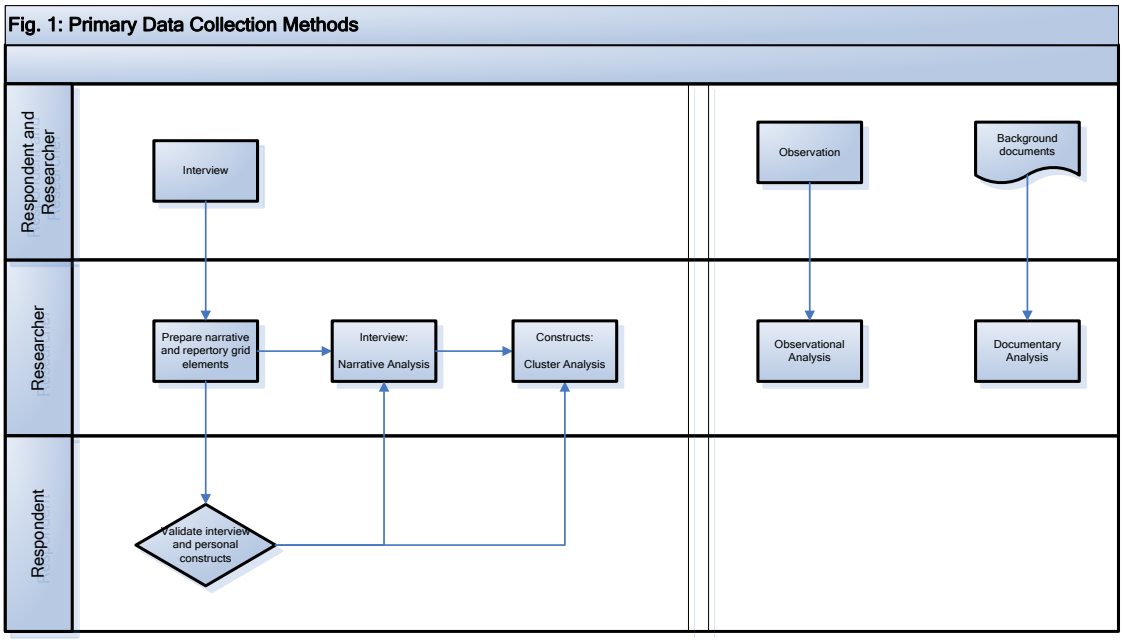
that it is to seek efficiencies within construction procurement amounting to 10-20% of total cost. Research into the architectural, engineering and construction sector has suggested that between 12-50% of construction costs are related to the correction of errors, particularly those emanating from the pre-construction phases highlighting the need to explore this area of activity more thoroughly.

Whilst there have been many post war studies into the construction sector most have focussed on the private sector and many of these on the implementation phase with few exploring the influence that the pre-construction phases have on the success or otherwise of the project. This is borne out by the extensive literature search that preceded the case study which has revealed that this research project is the first to study the subject of the information behaviour of construction project teams. As such the focus of this research is in the concept and planning stages of the project team's activity where the ability to influence outcome, cost and therefore efficiencies is greatest.

How will the project be delivered?

The approach taken to data collection is primarily a qualitative one based largely on the evidence of those within the project team. Other data will come from limited observations and documentary evidence provided by the local authorities and other stakeholders involved in the research. The results of the research will appear in the researcher's thesis scheduled for completion at the end of 2015.

Before and after this date the researcher may use the results, which will be anonymous, to write papers for academic journals, other publications or for presentations to conferences. The case study organisations will also receive an anonymised report on the findings of the research and interim feedback (see Q10).



What are the expected results?

The study does not seek to test a hypothesis, it is inductive meaning that any models that emerge from it will be driven primarily by the data collected from the case study. As such the research project aims to develop a model of project team information behaviour that can be used to design and inform future environmental, technological and social exigencies of project team management and communication. The model will have most relevance to the case study authorities but it is anticipated that the anonymised results will also strike a chord with other practitioners leading to more informed information systems design, team assembly considerations together with a better alignment between social processes and project methodologies.

3. What are the potential risks to delivering the project?

The following key risks have been identified as part of this research.

(a) Ensuring that people's voices are accurately represented.
(b) Interview respondents deciding not to participate or to opt out of the research.
(c) Maintaining confidentiality.
(d) Time management and the need to limit the impact on the project and on project team members.
(e) Health and safety and the need to keep respondents safe.
(f) The research stops earlier than expected.

4. How will these be managed?
    a. The perspectives of those interviewed will be reflected back to them for validation and to rank the most important personal constructs before being used in the research.
    b. The decision whether or not to participate in the research is solely a matter for the stakeholders and potential interview respondents. Informed consent will be sought from interview respondents (and other stakeholders participating in the research) and written approval will be obtained before any interviews take place (see Appendix).
    c. The respondents will be given anonymity and the chance to challenge the emerging narratives. The purpose of the information being obtained will be explained to the subjects in plain English (see Appendix) prior to obtaining their explicit written consent. Data will be stored according to the rigorous data protection guidelines of the University of Leeds.
    d. The time commitment required from each interview respondent is two interviews, limited to a maximum of 1 hour each and separated by a period of 8-12 months. The document analysis will involve existing documents required as part of the project process. Administration will be carried out by the researcher.
    e. It is likely that most interviews will take place in a typical office location for the convenience of the respondent and the need for a quiet area away from the work station. It is envisaged that all meetings will take place within buildings and rooms with the appropriate access and health and safety assurances and hence where physical/mental harm is highly unlikely.
    f. If the research activity stops earlier than anticipated for some unforeseen reason(s) each participant will be notified and an explanation provided. There are no plans to curtail this research.

5. List who will be involved in the project/activity (partners and stakeholders)?

The following roles are envisaged during the data collection phase of the research.

Person	Activity
Researcher	Undertaking the main tenets of the research activity and any associated administrative duties.
Individual (interview) respondents	The respondents will be asked to attend two interviews with an 8-12 month gap between them and will be asked to answer the questions as best as they are able. The interviews will remain confidential and results will be anonymised when published. The number of interview respondents will range between 4-8 depending on the project type with the majority being from within the project team and the remainder from the wider project domain.
Project Team /Project Board	The project team / project board will be asked to provide copies of a limited number of publicly available project documents (say 10-12) and to give the researcher access to a limited number (say 4) of project team meetings over a 8-12 month period. Attendance at a handful of meetings to observe information behaviour activity will also be sought from the organisations and individuals concerned.
Stakeholders	Stakeholders will be asked for permission to undertake the research and to propose as appropriate initial interview respondents.
Research Supervisor	To assist and support the research and to deal with any concerns raised by the respondents or case study organisations that the researcher is unable to address.

8. What resources are required for the project and have they been identified?

The following resources will be requested from the case study stakeholders.

Resource type	Purpose
Project Documentation	To provide background to the project.
Access to a handful of team meetings	To observe how the information is used is a social context.
Meeting room	A venue to interview respondents.

9. When will the project be delivered and what are the milestones?

The indicative research programme is as follows:

Preparation	Milestone
Pilot study	Complete
Negotiating access to case studies	Complete
Case study #1	Underway
Case study (#2) and feedback	
First interviews	February – March
Aggregated feedback to case study respondents	May – June
Final interviews	November - December
Aggregated feedback to case study respondents	March - April
Further analysis	
Detailed analysis and theory synthesis	May - October

Aggregated feedback to case study organisation	December - February
Revisions	February - September
Thesis submitted	December

10. What will the governance arrangements and accountability for the project be?

The research process is governed by Leeds University's research and ethical and professional integrity guidelines. Should you have any concerns about the research that cannot be resolved by the researcher please contact his supervisor – details in the Appendix.

11. Relevance to equality, diversity, cohesion and integration

The research does not aim to exclude any groups. Therefore, appropriate consideration will be given to accessibility and timing of meetings and observations in order to avoid any unintentional exclusion.

Supported: ☐ Not Supported: ☐

Reasoning for supporting/not supporting project/activity:

Signed: Date:

APPENDIX: PARTICIPANT FAQ AND CONSENT FORM

FAQ and Consent Form for individuals taking part in the research

What is the purpose of this FAQ? - You are being invited to take part in a research project as an interview respondent and/or as part of the observation of project team meetings. Please take time to read the following information carefully and ask if anything is unclear or if you would like more information.

What is the purpose of the research? - The research involves an exploration of the factors that influence the information behaviour of project teams. Information behaviour consists of those activities that a person may engage in when identifying his or her own needs for information, searching for such information in any way, and using or transferring that information.

Why have I been chosen? - You have been chosen because you are part of a project team / project board and you have been suggested as a potential interview respondent by your organisation or another project team / project board member.

Do I have to take part? - No, it is up to you to decide whether to take part. You do not have to give a reason.

What will happen to me if I take part in the interviews? - You will be asked to participate in two interviews each one lasting approximately 60 minutes. The interviews will be separated by approximately 8-12 months and start in the summer. The interviews will include a series of short bibliographical questions to confirm your role and so on. Then you will be asked to think about a time in the last six weeks or so where you or the project team/project board needed to use information to make or inform a critical decision, and about the role of other stakeholders in this process.

What will happen to me if I take part in the observations? - The researcher will sit and take hand written notes (no recordings will be made) of the key information behaviour activities taking place during project team meetings. The observations are separate from the interviews in that both will be analysed separately. No individuals will be identified during the observations and any findings will be anonymised. You will not be asked to act differently than normal.

What are the possible disadvantages and risks of taking part? - The main disadvantage for participants is the time factor. It is anticipated that the time commitment over the 8-12 month period will be two 60 minute interviews, and a small amount of time to check what has been written about you. There are no additional time commitments as part of any observations. All the information that is collected about you during the course of the research will be kept strictly confidential. You will not be able to be identified in any reports or publications.

What are the possible benefits of taking part? - You will be given a summary of the research and an opportunity to discuss the findings. It is also hoped that this work will help to develop better information systems, processes and an understanding of how humans manage information to inform better decision making in construction project management. The analysis will also provide insights into information behaviour and assist in the development of future projects by the case study organisations.

What happens if the research study stops earlier than expected? - You will be notified and an explanation provided.

What type of information will be sought from me and why is the collection of this information relevant for achieving the research project's objectives? - The researcher will compile and then analyse the responses of each person who is interviewed. Based on what is said the researcher will draft a summary for you to check. The observations will be used primarily to help to inform findings elsewhere in the case study. When all the results are collected, they will be built up to develop a picture of the information behaviour (how people search, use and identify a need for information) within project teams.

What will happen to the results of the research project? - The results of the research will appear in the researcher's thesis scheduled for completion in 2015. Before and after this date the researcher may use the results, which will be anonymous, to write papers for academic journals, other publications or for presentations to conferences.

Who is organising and funding the research? - The researcher is a practicing project manager within local government and is undertaking this doctoral research at the University of Leeds as part of an independent and self-funded study.

Will I be recorded, and if so how will the recorded media be used?
- An audio recording of your interview will only be used for analysis. The results of the analysis will be anonymised. No other use will be made of it without your written permission, and no one outside the research team (see below), unless it is a transcription company which has signed a non-disclosure agreement and which uses secure servers to temporarily store the recording before deleting it once the transcript is produced, will be allowed access to the recording.

Researcher	Franklin Riley – [number redacted] bnfr@leeds.ac.uk	Contact Address - Leeds University Business School, Maurice Keyworth Building, Leeds LS2 9JT
Lead Supervisor	Dr. David Allen - [number redacted] d.allen@lubs.leeds.ac.uk	
Supervisor	Professor Tom Wilson - t.d.wilson@sheffield.ac.uk	

Participant Consent Form

Title of Research Project: Information behaviour in construction project management teams

Name of researcher / interviewer: Franklin Riley

Please **initial the box** if you agree with the statement to the left

1 I confirm that I have read and understand the FAQ on the reserve side of this form explaining the above research project and I have had the opportunity to ask questions about the project.

2 I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason and without there being any negative consequences. In addition, should I not wish to answer any particular

question or questions, I am free to decline.

3 I understand that my responses will be kept strictly confidential.
I give permission for members of the research team to have access to my anonymised responses. I understand that whilst direct quotes may be used my name will not be linked with the research materials, and I will not be identified or identifiable in the thesis, reports or articles that result from the research.

4 I agree for the data collected from me to be used in future research, subject to the above stipulations.

5 I agree to take part in the above research project and will inform the researcher should my contact details change.

_____ _____ _____

Name of participant / Date / Signature

Franklin Riley _____ _____
Researcher Date Signature

To be signed and dated in presence of the participant

After the form has been signed, you will receive a copy.