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Collaboration in public sector projects: unearthing the contextual challenges posed in project environments

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Collaboration is seen as an essential business trait in the construction industry for effective project delivery. Collaboration occurs in two stages: stage one is the development of a collective identity engaged through discursive practices, followed by stage two, where the collective identity translates the conversations into synergistic action. The antecedent dimensions that foster collaboration are: shared direction, collective action, competence of the members, power distribution and equality, and trust and communication. The research methodology employed ethnographic interviews within a single case study of a healthcare facility construction project. The findings of the case study suggest that contextual issues arising from the public project set-up had profound negative impact on collaboration; specifically the development of a collective identity and discursive practices. It was identified that the approach to the service provider selection, hierarchical governance mechanisms and the political landscape influenced by the disposition of the client, contributed to: inadequate fees, unreasonable expectations, bureaucratic processes, concentrated power structure and strictly controlled communication. Collectively, this led to a negative impact on the dimensions of collaboration. The findings can assist project team members, specifically the clients, to proactively recognize how the context specific dispositions of team members are influenced by specific governance mechanisms and political landscapes, impacting on the extent of collaboration.

Keywords: Collaboration, formality, informality, information technology, project governance.

Introduction

Collaboration is believed to have the potential to produce great results, but not all collaboration initiatives realize this potential. In the last decade or more, the construction industry has been under significant pressure to adopt initiatives that foster collaborative practices. The nature of collaboration is a form of interaction between collective groups of people with the intention of delivering a beneficial outcome. In essence '[c]ollaboration involves individual participants working in [multi-disciplinary/inter disciplinary] teams, while representing the interest' (Hardy *et al.*, 2005, p. 59) of the organization they represent. Collaboration is also distinguished along the inter-organization and intra-organizational contexts. The latter form of organization poses a social dilemma where 'parties choose between the non-cooperative strategy of pursuing their own interests and the cooperative strategy of pursuing the collective interests' (Leufkens and Noorderhaven, 2011, p. 432).

The extent of genuine collaboration between the members of a project team, in a given situation, is shaped by the evolving nature of relationships influenced by the beliefs held by the members (Bresnen and Marshall, 2000a; Schein, 2004) and the cultural environment (Martin, 2002). Moreover, the project environments within which team members operate, also impact on effective collaboration. That is, whether the project team choose to collaborate or compete can be contextualized through the nature/complexity of project (Eriksson, 2008), the types of mechanisms used to govern the relationships (Eriksson and Westerberg, 2010; Kadefors, 2011) and the intent of the members to collaborate (Hardy *et al.*, 2005). A proactive management of relationships between the stakeholders is the key for collaboration (Smyth and Edkins, 2007). Therefore, understanding contextual

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issues impacting on collaboration in projects (Lampel, 2001) specifically delivered by multi-disciplinary intra-organizational teams engaging both public and private sectors, is key for making improvements in project delivery.

Fostering collaboration in loosely united temporary construction project organizations poses significant challenges. The discontinuing relationships, fragmented processes and litigious attitudes, do not provide an environment conducive for developing the right ingredients, such as trust and interdependencies, for collaboration among project team members. In addition, the bureaucratic nature of public organizations poses significant challenges to effective delivery of public sector projects. Notwithstanding government initiatives to reducing bureaucracy through creating learner and flexible public organizations (Arnaboldi *et al.*, 2004), the probity issues faced by the public sector organizations (Queensland Government, 2006), will not allow flexibility to the extent of private sector organizations (Domberger *et al.*, 1997; Parker and Gould, 1999).

The aim of this paper is to identify the contextual issues that impact on collaboration in a public sector project. This paper initially constructs a conceptual position on collaboration which is then used to analyse a public sector healthcare project to identify the issues influencing collaboration. The conceptual position is arrived at through the discourse of 'integration' and 'formal/informal' perspectives. Moreover, the dimensions of collaboration identified through the literature, namely shared directions, collective actions, competence of the members, power distribution, trust and communication, are layered into the conceptual position. The research methodology is underpinned by constructivist philosophy assuming multiple realities of the world. Ethnographic interviews were conducted to make data in the context of a single case study. This paper concludes by identifying contextual challenges faced in fostering collaboration in public sector projects that enable proactive management of contextual issues impacting upon collaboration.

Collaboration in context

Collaboration as 'integration'

The concept of collaboration is conceptualized through different contexts, including project team (Bresnen and Marshall, 2000b; Phua, 2004), supply chain (Akintoye *et al.*, 2000), information and communication technology (ICT)/online engagement (Alshawi and Ingirige, 2003; Nikas *et al.*, 2007) and knowledge management/learning (Söderlund, 2010; Pemsel and Widén, 2011). Moreover, in the literature, collaboration is synonymous with terms such as integration (Baiden *et al.*, 2006), partnering/alliancing (Chan *et al.*, 2003; Bresnen, 2009; Kadefors, 2011), and teamwork (Baiden and Price, 2011).

Baiden and Price (2011) suggest that project team integration occurs where multiple disciplines or organizations with different goals and cultures 'merge into a single cohesive and mutually supporting unit … with collaborative alignment' (p. 129). Martinsuo and Ahola (2010) suggest that integration is a form of collaboration and control between the project team members. They argue that existing literature does not adequately discuss the interplay between certain contextual contexts and different integration mechanisms leading to different collaborative outcomes.

The integration of ICTs is also argued to foster collaboration (Fawcett *et al.*, 2008) in the construction industry (Chan *et al.*, 2003). ICT tools have contributed in addressing some of the information fragmentation issues impacting collaboration (Hannus *et al.*, 1999; Alshawi and Ingirige, 2003; Ruikar *et al.*, 2003). In the last few decades, the progressive use of ICT in the construction industry has evolved from 'inter-organisational information automation' to 'supply chain-wide (intra-organizational) information management' (Fujitsu-Centre, 1998). Arguably this also contributed to the enhanced collaboration in construction project supply chains (Stewart, 2007). Nevertheless, the goal of improving levels of 'integration' through the use of ICT tools remains elusive (Brewer and Gajendran, 2011).

Some form of shared understanding and shared capabilities between project team members is seen as essential for achieving collaboration (Gajendran and Brewer, 2007). Despite the prospect of enhanced efficiencies, through some shared alignment, any form of total integration in construction projects is questioned (Briscoe and Dainty, 2005; Baiden and Price, 2011). The contextual issues surrounding a particular project set-up, and the project governance mechanisms, profoundly impact the extent to which collaboration is enabled (Peansupap and Walker, 2006; Jacobsson and Linderoth, 2010).

Collaboration through formalization vs. informalization

Holt *et al.* (2000) suggest that collaboration can be paradoxical in nature. While the intention of collaborative relationships is to deal with complexity, effective collaboration will be least recognizable when it occurs through team members' genuine interactions. Often project arrangements stress the importance of formal configurations of control oriented mechanisms for 'engineering' collaboration for creating different

types of relationships, or collaborative behaviour, between team members (Martinsuo and Ahola, 2010). This approach may hinder genuine collaboration (Holt *et al*., 2000) as it undermines the role of social dynamics and informalities on the development of relationships between team members (Bresnen and Marshall, 2002).

Hardy *et al*. (2005) suggest collaboration is a cooperative relationship 'in which participants rely on neither market nor hierarchical mechanisms of control to gain cooperation from each other' (p. 58). 'Hierarchical' or 'Market' form of governance is distinguished along the dimensions of authority, ownership and incentives (Makadok and Coff, 2009). They concur with Holt *et al*. (2000) and Bresnen and Marshall (2002) in suggesting that sole dependence on governance-based control cannot secure true cooperation among team members. Caglio and Ditillo (2008) claim that in highly uncertain transactions, risky environments and symmetrical partnerships, formal market and hierarchy-based controls are not sufficient and that additionally, informal and collaborative forms of integration (see also Kapsali, 2011)—including trust and decentralized cooperation—are needed.

However, it is imperative that all forms of collaboration occur within the broad context of both markets and hierarchies (Bresnen and Marshall, 2002; Makadok and Coff, 2009) while some combinations of these mechanisms can provide a more amenable contextual environment for collaboration. Therefore, the role of different forms of formal governance mechanisms influencing effective collaboration may not necessarily be clear-cut. In this light, simply equating the one form of governance or other to fostering collaborative or non-collaborative practices needs to be treated with caution (Hardy *et al*., 2005).

Dimensions of collaboration

D'Amour *et al*. (2005) suggest '[C]ollaboration conveys the idea of sharing and implies collective action oriented toward a common goal, in spite of harmony and trust … ' (p. 116). They view that effective collaboration depends on ongoing negotiations and the emergent relationships between the team members through the life of the collaboration and is closely associated to sharing, partnership, interdependency and power. A model proposed by Hardy *et al*. (2005) suggests the process of effective collaboration results from two stages. This model is constructed based on conversations, including face-to-face dialogue and other forms of discursive practices, including hard copy and digital communication. The first stage seeks to establish a discursively constructed collective identity. The second stage is about how the collective identity translates conversations into synergistic action and innovation.

In the process of understanding collaboration, it is essential that the dimensions nurturing a collective identity and synergetic action underpinning collaboration be deconstructed. Deconstructing collaboration is critical to robust analysis of the impact of contextual issues in the project environment and extent of collaboration between project team members. From a construction industry perspective, constructs including partnering, supply chain integration, project team integration knowledge management/learning and ICT-mediated communication entail collaborative working relationships between parties (Chan *et al*., 2003; Alderman and Ivory, 2007). Literature identifies shared direction (D'Amour *et al*., 2005; Bresnen, 2007), collective action (Fong and Lung, 2007; Doloi, 2009), competency (Dainty *et al*., 2004; D'Amour *et al*., 2005), trust (Chan *et al*., 2003; Lau and Rowlinson, 2009) and power distribution (Briscoe *et al*., 2001) and communication (Chan *et al*., 2003; Doloi, 2009) as critical dimensions of collaboration.

Shared direction

To achieve collaboration members of a team need to consciously or unconsciously acknowledge inter-dependencies with other members. The understanding of the interdependency between the team members (Söderlund, 2010) reinforces shared direction and enables the team to craft shared values and a desire to deliver synergies. When two actors collaborate over an extended period of time, the relationship and interdependencies between them become increasingly institutionalized. This leads to the development of shared routines and practices that enable the team members to collaborate more effectively.

Members sharing similar values can lead to integration (Martin, 2002; Schein, 2004) fostering a cultural environment conducive for collaboration (Bresnen, 2007). Developing a shared direction also requires commitment from the team members and the organizations they represent (Eisenhardt, 1989; Akintoye *et al*., 2000; Muller and Turner, 2007). This makes the agents, generally the roles held by the project manager (PM), project architect, project engineer, etc., an important and crucial link between the organization and the project. The organizations and their agents need to establish and pursue shared goals and develop a common desire to deliver synergies (Winch, 1989; Walker and Newcomb, 2000), and collectively, this enables pursuit of common goals. However, significant challenges are posed by the structure and nature of the construction industry establishing shared direction among the project team members.

Söderlund (2010), Bresnen and Marshall (2000a) and Turner and Muller (2003), argue that the temporary and fragmented nature of project organizations, often with a large number of new team members who enter the project at different point in time, pose significant challenges to the interdependencies. The uniqueness of each project situation typically requires 'a new role structure and new interdependencies, which tend to upset standard operating procedures and conventional routines … Inherent in many of these organizational processes are the problems of combining diverse capabilities and interdependent work toward a common goal' (Söderlund, 2010, p. 134). Nordin *et al.* (2011) argue that as partners remain as separate firms, their interests and actions do not automatically converge in collaborative arrangements and that there is some risk that partners may then act opportunistically. Although both public and private projects will face similar challenges in establishing a shared direction, public sector projects with multiple client agencies/representatives subjected to bureaucratic structure, can pose elevated challenges.

Ruuska and Teigland (2009) suggest that to overcome the issues of conflict due to differing goals, resource scarcity and interdependence of tasks, the project team should (a) co-develop a clear project charter (b) employ a project leader with strong brokering skills, (c) use boundary objects for joint problem solving, and (d) make the team aware and constantly reminded about the 'big picture' through open and balanced communication.

Collective action

Collective action is interconnected to shared direction and is underpinned by the team members' commitment to perform their shared responsibilities in a genuine manner (Bresnen, 2007) to achieve the shared goal. The 'blame culture' and passing of responsibilities unduly to other members are not favourable attributes of collaboration (Rooke *et al.*, 2004). Non-autonomous behaviour embracing collective planning, intervention and decision-making, is critical for collaboration (Cheng and Li, 2001; D'Amour *et al.*, 2005). Although governance mechanisms formalize team members' roles, responsibilities and decision-making processes, fostering genuine commitment among the team members cannot be easily formalized. Kapsali (2011) argues that flexibility in planning, communicating and controlling, is critical for any form of innovation and refutes previous theory that claims formalizing is the way to manage complexity and uncertainty.

Collective action can be thwarted by the boundaries created by the fragmented nature of project organizations (Moore and Dainty, 2001). Pemsel and Widén (2011) argue, that when boundaries distinguishing internal operations from external activities and controlling flows of information become too rigid or too loose, they become problematic. Public sector projects could be inclined to create rigid boundaries, arising from probity/accountability measures and bureaucratic structure, which are detrimental to collective action.

Ratcheva (2009) indicates that for effective integration of multi disciplinary competencies, the project team members are required to actively involve in collaboration through boundary spanning roles. However, Holt *et al.* (2000) argue that knowledge heterogeneity coupled with geographically dispersed team members, could hinder effective collaboration and sharing of a team's knowledge and competencies. They identified three project boundaries namely, project action boundary, project knowledge boundary and project social boundary, as impacting on collaboration. Moreover, collaboration may be hindered by 'psychological barriers' among the team members, 'stemming from the fear that the one may out-learn or de-skill the other' (Holt *et al.*, 2000, p. 416).

Competence of the members

Collaboration is highly dependent on the competency of each team member (Dainty *et al.*, 2004). Collaboration stalls when a team member or members perceive that the other team member or members are not capable of delivering outcomes. Pemsel and Widén (2011) suggest that when fostering collaboration for productive knowledge exchange, it is necessary to understand client needs and to ensure the availability of sufficient competence within and to provide time for the project team to perform its duties. Lampel (2001) argues that out of four distinct groups of core competencies, namely entrepreneurial, technical, evaluative and relational, that the literature on collaboration often ignores the relational idiosyncrasies of different contexts within which project teams operate.

Power distribution and equality

Distribution of power, and perceptions of equality and fairness among the team members, is a crucial dimension of collaboration (Briscoe *et al.*, 2001; Kadefors, 2005; Akintoye and Main, 2007). True collaboration materializes when power is embedded within the context of relationships, knowledge and skills, rather than functions or titles (Hartmann and Caerteling, 2010). Symmetry in the team members' power positions enables the stimulation of empowerment that fosters effective collaboration (Cox and Ireland, 2002; D'Amour *et al.*, 2005; Liu and Fang, 2006). On the whole, sharing of risk and associated reward, also

impact on collaboration (Anvuur and Kumaraswamy, 2007; Aibinu *et al*., 2011).

Trust

Trust is frequently mentioned in literature as a critical dimension of collaboration (Khalfan *et al*., 2007; Uden and Naarnoja, 2007). Trust is built through confident collegial, authentic and constructive relationships, via honest interactions. Potentially, trust can develop mutual respect among members, however establishing trust in inter-organizational projects is difficult (Maurer, 2010). The expectations and predictions of the team members' good intent and subsequent behaviour underpinning trust make it difficult to foster trust in project settings, where partners often lack prior collaboration experience. The discontinuing nature of inter-organizational project organizations creates high levels of conflict and suspicion among members. In addition, they have limited time and regularly suffer from time pressure throughout the time span of the project (Nordqvist *et al*., 2004).

Trust provides a multitude of benefits to collaboration partners that stem from direct or moderating effects on a variety of desired performance or behavioural outcomes (Dirks and Ferrin, 2001). Prior research has shown that the antecedent factors of trust may refer to individual factors, such as the agreeableness of partners (Mooradian *et al*., 2006), contextual factors, such as contractual agreements (Kadefors, 2004) or relational factors, such as common interests, a shared vision and ideas of collaborative sharing.

Communication

Communication is an overarching aspect that has a bearing on all the above-mentioned dimensions (see also Loosemore and Muslmani, 1999; Hoogervorst *et al*., 2004; Doloi, 2009). Communication is critical for developing a shared direction and forging collective actions. It enables evaluation of the level of competences and thereby builds confidence (or lack of confidence) in a team. Communication is critical in understanding and conveying power distribution and equality perceptions and lies at the core of developing trust and respect.

A conceptual position

It is proposed that contextual issues surrounding a particular project set-up impacts the extent to which collaboration is enabled. Moreover, extent of collaboration is influenced by both formal and informal (governance) contexts within which the project operates. The genuine collaboration is fostered by team members' willingness and ability to develop a shared direction and operate collectively through exercising specific competencies. Fostering effective communication practices to engender trust and cultivate power based on equality/fairness are essential for genuine collaboration.

Research method

Collaboration is a complex and paradoxical phenomenon shaped by both formality and informality. Most paradoxical phenomenon entrenched in social practices are best approached by qualitative post-positivist approaches (Gajendran *et al*., 2011). Collaboration studies can be conceptualized through a cultural lens by which a team's (non)-collaborative behaviour can be explained, using the underlying beliefs held by the team members (Gajendran *et al*., 2012). This is also closely akin to the discourse perspective on collaboration taken by Hardy *et al*. (2005). This research has used an exploratory approach underpinned by a constructivism paradigm that acknowledges multiple realities of the world. This paradigm approach accommodates consideration of different stakeholder's realities, facilitating meaningful interpretation of their beliefs and assumptions on collaboration.

In conjunction with the constructive paradigm, the research method used a single case-study strategy contextualized in ethnography. A single case-study design aims to develop a deep understanding of contextual issues surrounding a case, or phenomenon, enabling critical reflection on context specific findings and to make context-specific generalizations (Stake, 2005; Yin, 2009). The choice of a single case-study design in the context of this paper is supported by Stake's (1995, 2005) 'instrumental' case design. The aim of the 'instrumental' approach is to develop a general understanding of a particular phenomenon (e.g. collaboration) through the chosen case study.

The selected case study was a complex expansion of a healthcare facility for a public area health service client secured through construct-only procurement. This project was one of the numerous, hospital expansion projects in the region managed by a project management firm (also in charge of design and contract management) appointed by competitive tendering by the state government agencies in Australia. This project was subject to a considerable level of technical and organizational complexity. The technical complexity arose due to: (a) construction occurring while the main hospital was operating; issues associated to managing traffic, parking, noise and pollution levels (b) extensive integration of specialized (health related) mechanical and electrical services within the new and existing buildings and (c) phasing of the construction

of building and associated civil infrastructure in a constrained site. The organizational complexities were: (a) managing intricate relationships between a large number of stakeholders and (b) managing information flows through complex organizational set-up. The project organization structure was a unique one. The design and construction team members dealt with a complex (or cumbersome) reporting and approval framework making communication protocols challenging.

In usual terms, such a project will be funded by the treasury and managed by the project pubic works department (liaising with the hospital management/or client associated stakeholders), with assistance from the state architects department. However in this case, an external firm was appointed, to project manage the design and construction performed by numerous external firms. The project team (specifically the PM) is required to coordinate design and construction issues with at least four stakeholders associated to the hospital (area health agency, doctors/nurses, facilities management and community groups). Furthermore, they had gone through a stringent approval process during the design/construction stages. The design approvals had to be obtained initially from the independent certifiers and then followed by numerous public works agencies. Moreover, the client's focus on cost/time certainty, risk minimization on their part and the desire to have some form of control over the design process, encouraged them to procure this facility through a traditional procurement path. In addition, the client body wanted the private sector to manage the public sector organizations to deliver this public facility. In essence, the levels of technical and organizational complexity of this project require effective collaboration among the team members. The contextual environment surrounding this project makes it a relevant case study to explore the aim of this paper.

The boundaries of a project team to contextualize collaboration in a construction project were identified in the case study while in-depth ethnographic interview technique extracted data from the project team members. The client, consultants (PM, project architect, project quantity surveyor and building services consultant), principal contractor and two subcontractors (one trade and one specialist), as part of the project organization, were selected to part take in the study. The interviews with these eight members, each lasting approximately 1 h, took place at a time and location convenient to the participants. All participants chose to be interviewed in the site office or their head office. Interviews were recorded and transcribed to perform the analysis.

Semi-structured questions, using a mix of convergent and response guided principles (see Spradley, 1979; Thomas, 2003), was employed in designing the ethnographic interviews. This particular qualitative research approach was suitable for extracting the tacit and deep meanings held by the project team members in relation to collaboration. The interview transcripts were thematically coded and abstractions were made (Strauss and Corbin, 1998). The analysis focused on emerging themes from the data relating to contextual issues and dimensions of collaboration. Further analysis established the influence of the contextual issues on the dimension of collaboration.

Results

The analysis identified a number of key themes characterizing the contextual issues impacting on collaboration. They are: (a) team members understanding of 'collaboration', (b) bureaucratic characteristics and political agenda of the client organization impacting on collaboration, (c) service provider appointment and project governance contributing to discontentment, (d) project communication protocols destructing information flows, (e) the beliefs and actions of project team members leading to a suspicious communication environment, and (f) perceived and/or actual unrealistic expectations leading to 'the blame game'.

Understanding of the concept of 'collaboration' among members

Some of the project team members believe that true collaboration translates in a totally integrated design and construction of building. The successful outcome of collaboration is reflected through the ability of a facility to satisfy the needs of the occupiers even after 15–20 years. In view of this, the result of true collaboration can only be tested through time. Team members argue that although real collaboration has time and cost implications, if achieved, it pays dividends. One symptom of failure of collaboration is arising conflicts/arguments among team members about uncoordinated (inadequately integrated) drawings or inadequate information provided to perform their activities, which impacts upon project progress. All interviewees concurred, that the best way to minimize uncoordination or unforeseen issues, is to have adequate time to undertake the design.

Bureaucratic and political characteristics of the client organization

Although the user of the facility under construction is the area health service provider, the client body was represented by a number of public sector organizations. The client representative was the first agent between

the project team and area health (as well as other government agencies who form the client body) and the second agent representing the client was the 'PM'. The client team was composed of several government bodies and agencies and was bureaucratic in nature. This caused notable delays in the decision-making process that impacted on project progress.

The area health provider, being a public sector organization, is influenced by state and federal political environment and the project time frame and budget are sensitive to political agendas. Normally, the requirement for public accountability influences the service provider selection mechanisms. A quote from the Architect's interview to support his claim is presented below.

> Architect: … you are aware of the political ramifications of what you are doing and the deadlines that are imposed by the client for political reasons, election dates, certainly the work has to be done by a certain period of time. … in this [project] there was pretty much a unilateral position on their [PM] part for us to do the project and complete everything over a certain period of time. Very little flexibility.

Service provider appointment and project governance contributing to discontentment

The client used predominantly hierarchical governance mechanisms in appointing and managing the service providers. The client appointed both the consultant team and the principal contractor through the competitive tendering process to ensure public accountability. The fixed fee tendering method was employed to appoint the consultancy consortium. The PM, who led the bid for the consortium, formed it through a relationship approach, as the majority of the design team members had previously worked together on other healthcare projects.

However, the fees for consultancy services were low due to competitive tendering. Low fees along with tight design timeframes negatively impacted on the quality of design documentation. The consultants and contractors were critical about the allocation of risks by the client, as the rewards did not match the risks. Moreover, tight competitive fees scales made the consultants operate in a lean and mean manner.

> Quantity Surveyor: For some reason [the] clients decided that they would get a better deal if they had [fixed fee] competitive tendering of consultants. Not understanding that the amount of money that they save, or the potential amount of money that they save, relative to the total project cost … is not likely to achieve the returns that they are looking for, if they get an uncoordinated set of drawings.

The governance of the design stage and construction stages were distinguished by their *power structure and communication protocols*. The project was predominantly governed by the formal contract with formal rewards and penalty regimes. The layers of formal power positions / power distribution were clearly established in terms of what each member can do within their power and authority. The PM maintained control over the consultants and principal contractor, while the principal contractor controlled the construction team. The governance approach to this project created a distance between the consultant and construction team. This distance was motivated by the belief that strict formal controls and the authority structure can minimize the possible opportunistic behaviours by the construction team.

The PM demonstrated a significant level of administrative control over the project through the contractual power vested in him as the agent of the client. However, the governance structure contributed significant delays in the follow-up of information and communication (discussed below). Therefore, the governance structure is believed to have unconstructive power distribution, resulting in team members not feeling empowered by the project organization set-up, impacting on the project performance.

> Architect: Sometimes it might take a couple of weeks to [sent] a reply [to enquiries from contractors]. By that time I could have answered the bloody request for information (RFI) [by myself] but I can't answer it directly. I've got to wait for it [RFI] to come from [the PM]. And then it goes to the [PM] and then from him to the builder. And the decision making process when making small changes on the drawings, well the drawings have got to be drawn then issued for approval to the project manager and then it comes back to us and then we've got to issue nine copies and it's got to be upgraded on the web. You know it can take quite a long time.

Project communication protocols destructing information flows

The PM set-up a web portal to manage project documentation and communication to assist collaboration. The portal was only open to consultants and the principal contractor. Except for regular monthly site meetings, it was difficult for consultants and the construction team to have a face-to-face communication on an on-demand basis due to geographical

dispersion of the consultants. Additionally, the PM had clearly indicated that all communication should be formal and be communicated via the online portal, using established stringent document handling and communication protocols.

Communication in design stage was both formal and informal in nature. However, all critical communications between the consultants were channelled through the PM. The PM was not critical of the informal communication during the design stage due to long-term relationships between the consultants and the PM, prior to this project, enabling them to engage with some level of trust. This relationship led to friendly communication among the consultants. Despite the flexible and relatively open communication protocols at the design stage, the tight time frame and consultancy fees have impacted on the quality of the design coordination. The consultants felt online portals, if not deployed properly, could almost become a distraction and hindrance to facilitate collaboration.

Contrary to the collaborative solidarity in the consultant team, consultants signalled their distance from the construction team. This distance was partly created by the communication fragmentation between these two groups. The flow of information during the construction stage was impeded by highly formalized communication protocols and the use of an online collaboration platform as the primary means of communication. This was motivated by the belief that strict control of information enables the reduction of uncertainty and opportunistic behaviours in a project by the construction team, so that time and cost overruns can be minimized. Therefore, during the construction phase, there was very little room for informal communication processes between the construction team and consultant team. It appears that not recognizing the limitations of online communication in the construction stage of the project created an ineffective communication environment.

Inadequate resourcing, in particular insufficient number of employees at the project management organization to manage the proposed online communication process, is believed to have added to the woes of an already inefficient protocol. The project management firm, who were the single point of contact for information between the construction and consultant/client team, faced information overload due to understaffing.

> Principal Contractor: We do find a little bit of a bottleneck up at [PM] side of things. They have one project manager looking after it and he basically has to manage all correspondence and all RFI's and we do find it a little frustrating from time to time that things can get clogged in their system to the point where we've got to ring and say … these RFI's are now [number of] days old, you haven't done anything with it. It's still sitting on your system, can you please do something with it. Everything works electronically and obviously I find the best way to resolve problems is to pick the phone up and talk to them.

> Architect: [RFI] goes to [PM] … because that's where everything has got to go through and that's where the problems start. (Name) is the manager of the project but he's so busy a lot of the time that for a couple of days he probably doesn't look at his e-mail and when he comes back and looks at it, he's probably got 30 RFI's. … that's probably a staffing problem. They probably need more staff. But they've got costs and fee problems as well … .

Team members' beliefs and actions in relation to project communication leading to suspicions

The consultants felt that the construction team deliberately worded some RFIs with ambiguous language to buy extensions of time. The client felt that the contractor was passing accountability to consultants. The subcontractor indicated that the principal contractor was not adequately resourced to manage the work packages. This volatile environment led to a partially confrontational communication disposition. Additionally, legal considerations are believed to have influenced the need to use the online communication portal, rather than the necessity to convey information directly.

> Client Representative: it has got to a stage now that you do not talk on the phone … you do not enter into face to face communication because it is not documented and you cannot use it as evidence … of course … therefore a lot of companies mandate that any communication via a traceable system … that is why it has become so big and so cumbersome so much of pain the backside … people are focused on covering their legal positions … rather than necessarily getting on with the job … this is a major [cultural change] and detrimental … now people spend time wording emails not focused on outcomes of the job but focused on outcome in court if ends up in court.

The client representative believes that firms used the online communication platform to deviously transfer accountability to other firms. He believes that the principal contractor shied away from their responsibility, allowing information-related delays to occur by not following up electronic queries (including RFI) to consultants using other modes of communication (e.g. phone calls, site meetings). However, the principal contractor indicated that they followed up on all electronic

queries that were not responded to by the PM within the contractually stipulated time frame. Essentially, the online communication portal meant different things to different members, but was generally not regarded as a tool for collaboration. In a sense, communication protocols created additional layers of physiological boundaries.

Perceived and/or actual unrealistic expectations leading to 'the blame game'

The client indicated that although their expectations were clearly articulated to the so-called 'specialist' health design and construction teams, they failed to deliver the project to expectations. Meanwhile, the design and construction teams indicated that the client had unrealistic expectations and believed that they had delivered the best outcomes within the constrained time frame and the fee scale offered by the client. All of the design and construction firms felt that the rewards did not match the risks associated with the client's expectations.

The design team indicated that fee competition could lead to inferior quality design (documentation) and subsequent serious cost implications in the construction stage. However, the quantity surveyor indicated that unrealistic expectations are not an unconscious but a *conscious* part of the business process, when dealing with clients who use service provider selection methods similar to the one used in this project. Key decisions relating to a project delivery, such as the design time frame and design cost, are made in the absence of service providers. It is common in such situations for service providers to agree to unrealistic expectations at the tender stage and deal with the consequences once they get the project.

Each team member developed an understanding of their scope of work in the project through the formal contract documents. However, they did not have a shared understanding of the goals for the project. The boundaries created by the absence of informal communication to some extent fragmented the project organization. This hindered the development of a common language across the project. Furthermore, members criticized other members of not delivering quality/desired outcomes. The subcontractor felt that the main contractor was not doing the job in a competent way.

> Subcontractor: … this is not being derogatory It's all learn as you go, … [Principal Contractor] should have a bit more foresight … Somebody who could understand all the facets, I think it's a position they don't actually exist within their organisation. Which would have avoided a lot of trouble.

The service providers agreeing to undeliverable expectations/targets, particularly stipulated by the client, created a situation where their capability and credibility being questioned.

Mapping the impact of project contextual environment on dimensions of collaboration

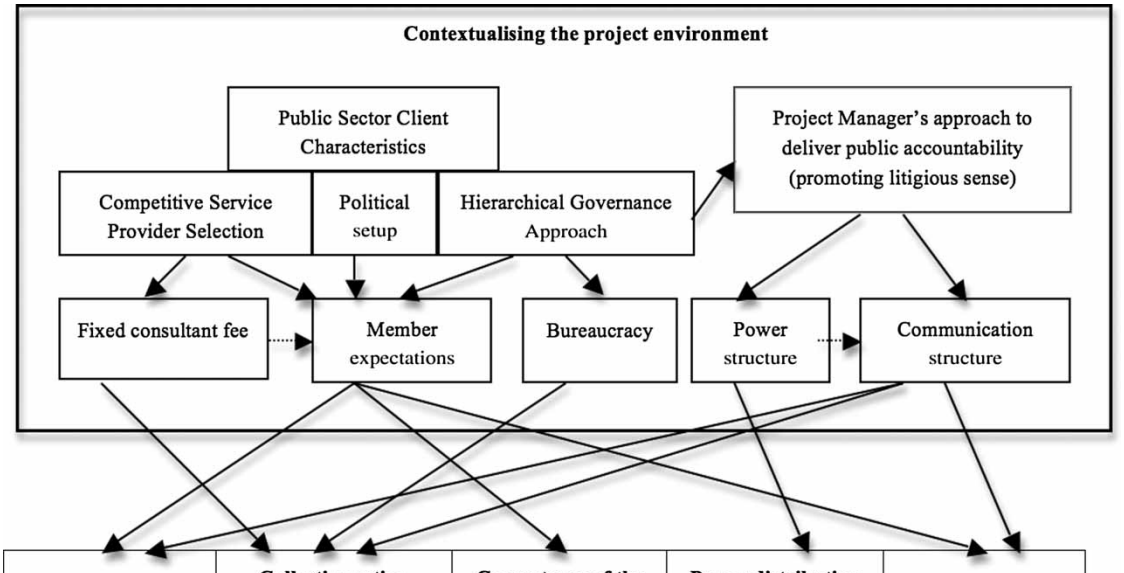
Figure 1 synthesizes the findings of the case study by mapping the five issues arising out of the project context impacting on collaboration. Each issue is then linked to dimensions of collaboration by explaining how positively or negatively the issues impact collaboration.

The political set-up and accountability measures required in managing public expenditure influenced the behaviour of the client organization. The client believed that service provider selection, via competitive (using fixed price) methods and governance via clear hierarchical authority through multiple agents, would provide the accountability required to complete this project successfully. In general, the time taken to design and construct the facility by the client organization led to political ramifications at the state level.

This client set-up raised three issues impacting on collaboration: (a) tight fee structure (b) unrealistic member expectations, and bureaucratic processes at the interface between the client organization and project team. The way the PM, who is an agent of the client, set up the project governance also raised two issues impacting collaboration: (a) the rigid power structure and the (b) strict formal communication structure.

The competitive consultant selection approach (characterized by tight fees) and limited design duration contributed to lower than expected documentation quality. Poor quality documentation led to a flood of RFIs during the construction stage that further led to some form of construction phase disorder. Moreover, the perception of improper risk allocation had an impact on the collaborative spirit between and within, the construction and consultant teams. This *fixed fee* impacted on the *collective actions* of the members. The hierarchical client set-up led to a bureaucratic and slow decision-making environment. The consultants and contractor expressed disappointment and frustration with the client's decision-making process which led to delays in the construction process. The *bureaucratic process* significantly impacted to the lack of *collective action* between the client and the construction team.

The expectations of project members were not met leading to question the competence of the members. The client felt their expectations of appointing a specialized hospital design team were not met, while the



Shared direction	Collective action	Competence of the members	Power distribution equality	Trust
Members of the project did not develop shared values and lacked shared direction. Members operated autonomously without much understanding of common goals. This impacted on delivering synergies.	Members passed responsibilities to other members in a blame game. Decision-making was discrete, impacting on collective decisions. Some level of respect and significant level of disrespect towards other members was evident. Level of commitment displayed was less than desirable.	Members questioned the competence of other members in the team. Client questioned the competence of the architect, and the sub contractor questioned the competence of the contractor. Architect questioned the competence of the project manager.	The power distribution was formally articulated and was primarily concentrated on the Project Manager. There was no evidence of empowerment in the project.	Confidence in collegial and constructive relationship, open communication and mutual respect among the design team members was evident. However, it was not the case between the design and construction teams.
Communication: Although communication during the design stage was both formal and informal, during the construction stage, all communication was formal. This inflexibility in the communication mechanism created additional layers of boundaries impacting negatively on all above collaboration dimensions.				

Figure 1 Contextual issues impacting on collaboration

consultants felt that the client had unrealistic expectations on what could be delivered, for the fee and design time frame. The PM did not meet the potential of the contractor's expectations in terms of response time to RFI, while the contractor did not meet the expectations of the subcontracts on the processes of technical/RFI management. The architects' expectations of the contractor about the variation management, were also not met. The mismatch of *expectations* contributed to the lack of *shared direction, collective action and trust/disrespect* between the members.

The power structure contributed to the establishment of formal protocols that provided a structured, rational, approach to problem-solving and dealing with critical situations. Consequently, the project was managed by administrative protocols established by those in positions of power, rather than steered by empowering someone who is best to respond to the situation. Lack of the informal approach to deal with critical situations or complex problems led to a slow response. This appeared to leave an inspirational vacuum to underpin team-based collaboration and informs us that the formal *power structure* impacted on the *power distribution and equality*.

The prior relationships between the consultants contributed to the ease of communication between design team consultants. However, they blamed the fee and time constraints imposed by the client for the lack of collaboration and the production of poorly coordinated design drawings. The low quality design documentation created tensions between the design team and the client and disagreement as to who should take responsibility for such an outcome. Over-emphasis on the online collaboration platform as the primary communication

mode caused some inefficiencies/bottlenecks in the construction processes.

The client and contractor believed that the project management organization did not adequately resource the online communication process; this also contributed to the inefficiencies in the information flow. The belief that the underlying thrust of communication was actually to keep records to deal with any litigation with the trading partners, which undermined the idea of online communication as the best medium for collaboration. This created a limited online communication engagement among trading partners and distrust among team members. As a result, the *communication structure* led to disrupted communication flows negatively impacting on the development of *shared project goals*. Disrupted communication flow also created ambiguity and conflicts (e.g. variations) leading to a lack of *collective action* and developing *distrust* between members.

In essence, the issues surrounding the project set-up negatively impacted all five dimensions of collaboration. Members of the project did not develop shared values and lacked shared direction. Members operated autonomously without much understanding of common goals. This impacted on delivering synergies as members were working to complete their scope of work without much understanding of the other team members. *Collective action* among the members was minimal and decision-making in the project process was not collective. Members passed responsibilities to other members in a 'blame game'.

Consultancy team members showed a level of respect to each other however, significant levels of disrespect between the client, consultant, contractor and subcontractor teams were evident. The level of commitment displayed overall, was less than desirable with members questioning the *competence of other members*, in the team. The power distribution was formally articulated and was primarily concentrated on the PM. There was no evidence of empowerment in the project and overall the project was characterized by *distrust*. The PM seems to have designed the entire project control mechanism based on the distrust, that is, with the view of curbing opportunistic behaviour by any team member (particularly any member from the construction team). Confidence in collegial and constructive relationship, open communication and mutual respect among the design team members, was not evident between the client, design and construction teams.

It can be argued that many issues impacting collaboration in the case study arouse (arose)? out of the manner in which the public accountably (accountability)? mechanisms were implemented and the way the political landscape shaped the project resourcing. The way the project was initiated and managed did not provide a platform conducive to establishing either a collective identity, nor engaging in discursive practices. However, public sector projects that can use alternative service provider selection and governance mechanisms could provide the desired level of accountability whilst providing a better environment for collaboration. Equally, with a PM empowering other team members and loosening the tightly controlled communication process, this may have also assisted in an improved level of collaboration.

Discussion

The findings identified a number of contextual issues associated with the project initiation and subsequent project management impacting on collaboration. The findings that indicate the need for collective identity and discursive practices to deliver successful projects, strike a cord with the view of Hardy *et al*. (2005), on the first stage of collaboration. Expressing production of a functional building, that is, habitable for significant periods of time in the future as 'the outcome' of good collaboration, also agrees with the second stage of collaboration. As a consequence, the results of true collaboration can only be tested through time.

This study contributed, as supported by Lampel (2001) and Martinsuo and Ahola (2010), to an improved understanding of interplay between context-based issues impacting on collaboration. It reinforces the need for proactive management of relationships between the stakeholders to foster collaboration, as indicated by Smyth and Edkins (2007). It also concurs with Baiden and Price (2011) and Briscoe and Dainty (2005), that engineering integration to achieve perfect collaboration, may not be practical.

The accountability measure and political landscape of the client organization encouraged competitive service provider selection processes and hierarchical governance mechanisms. The measures adopted by the PM to ensure accountability were tainted by extreme formal governance mechanisms. This set-up led to five issues that negatively impacted on collaboration in this project: tight consultant fees; unrealistic expectations of the team members; bureaucracy in the client organization; the concentrated power structure and; stringent formal communication protocols in the project organization. All five factors negatively impacted on the antecedent demission for collaboration.

The complex inter-relationships between the contextual issues, can engender different beliefs among project team members, that can impact on the extent of collaboration (Bresnen and Marshall, 2000a; Martin, 2002; Schein, 2004). The findings identify two such beliefs held by the project team members that impacted on

collaboration (a) highly formal governance approach can assist in managing uncertainty and public probity issues and (b) highly controlled communication via the online systems is more about litigation than collaboration.

Team members' beliefs can shape the extent of formalization or in-formalization of a project. Findings suggest that high levels of formality negatively impact on collaboration and are motivated by the belief that strict control of information enables the reduction of uncertainty and opportunistic behaviours, leading to better management of time and cost overruns. The formalization can also be associated with public-sector probity requirements. This is contrary to the view of Caglio and Ditillo (2008), Kapsali (2011), Holt *et al.* (2000) and Bresnen and Marshall (2002) who argue that high-level formalization is not the approach to deal with uncertainty and risky environments.

The findings suggest that highly formal project environment with minimal informality can lead to a partially confrontational communication disposition. Moreover, belief that legal considerations underpin the use of the formally embedded online communication portal, rather than the necessity to convey information firsthand, negatively impacted on collaboration. This indicated that fear, associated with legally dominated communication protocols, creates additional layers of physiological boundaries. This physiological barrier is distinctly different from the one suggested by Holt *et al.* (2000), where fear was about sharing knowledge with other project participants that could make them lose their competitive advantage. Moreover the finding reinforces the need for social boundary spanning roles, as identified by Pemsel and Widén (2011) and Ratcheva (2009), to generate collative identity in order to foster collaboration.

Although both public and private sector projects can face challenges related to low consultant fees and tight design time frames impacting on collaboration, the issues associated with government political agendas and probity issues are unique to public sector projects. Irrespective of the previous relationships between the consultant team members and their intent to collaborate, low fees and tight design time frames negatively impacted on their collaboration outcomes. However, contrary to the findings of Hoxley (2000), the competitive approach taken to select consultants (resulting in lower service fees) and shortened design time frames, contributed to lower than expected design documentation quality. This highlights the influence of badly designed or managed, governance protocols destroying collaboration despite the intent.

The findings indicate that contextual issues surrounding the project can hinder developing shared directions and collective action among the team members. Pemsel and Widén (2011) argue that team members need to understand the clients' needs and be equipped with required capabilities for collaboration. Findings suggest that although each team member understood the clients' needs from their own perspective (or scope of work), they did not develop a shared understanding of goals for the project, leading to difficulties in managing expectations. Although the findings indicate that the team members questioned the technical and evaluative competence of the other team members, the lack of relational competency as indicated by Lampel (2001), contributed to the lack of collaboration.

The project team's failure to (a) co-develop a clear project charter (b) employ a project leader with strong brokering skills (c) use boundary objects for joint problem solving, and (d) make the team aware and constantly reminded about the 'big picture' through open and balanced communication (Ruuska and Teigland, 2009) contributed to this negative outcome. The above-mentioned activities are critical for developed, shared, direction and appreciate interdependencies and managing expectations in temporary and fragmented project organizations with a large number of new team members entering the project at different points. (Bresnen and Marshall, 2000a; Chan *et al.*, 2003; Söderlund, 2010).

The findings support the positions taken by Lampel (2001) and Martinsuo and Ahola (2010) on the need to appreciate the complex interaction of the contextual aspects in fostering collaboration via multiple contexts, including ICT (Peansupap and Walker, 2006; Gajendran and Brewer, 2007; Jacobsson and Linderoth, 2010) governance mechanisms (Smyth and Edkins, 2007; Bresnen, 2009) and social dynamics (Holt *et al.*, 2000).

Conclusion

Collaboration is a critical facet of construction project teams to deliver successful project outcomes, yet it is seen as something hard to foster in project-based organizations. The literature identified five dimensions as antecedent for collaboration: shared direction, collective action, competence of the members, power distribution/equality, trust and communication. These theoretical dimensions of collaboration were used as a framework to analyse the case study in order to identify the contextual issues impacting collaboration.

The findings identified five issues that could negatively impact on collaboration in public project organizations: (a) tight consultant fees, often an outcome of competitive fee tendering (b) unrealistic expectations of the team members, at times driven by national/regional political agendas and/or perceived/actual

deception among members (c) bureaucracy in the client organization, driven by a disproportionate number of stakeholders, and process inefficiencies (d) the concentrated power structure, often driven by the need for control and (e) stringent formal communication protocols assumed necessary to counter uncertainty and opportunistic behaviours.

The findings also identify two beliefs held by the project team members that impacted on collaboration. One belief associated formal governance mechanisms as an appropriate approach for managing uncertainty, opportunistic behaviour and public probity issues. The other belief is that highly controlled communication via the online systems is more about litigation than collaboration. These beliefs create additional layers of boundaries among project team members, negatively impacting on collaboration. Therefore, it is imperative that clients or their representatives through their line of command should have allowed some level of informal interaction to foster genuine collaboration. Clients and their representatives should demonstrate leadership and develop clear project charters with a holistic 'big picture' attitude. The dissemination of the project charters and problem-solving should be fostered through boundary spanning roles. However, the key is to ensure that the service provider selection mechanism, employed to make small savings in consultancy fees, does not foster negative behaviour during the project execution.

In essence, these five contextual issues arising from the public project set-up can negatively impact on the atmosphere for collaboration, specifically the development of a collective identity and discursive practices. The dynamic interactions between these contextual issues can create different trajectories leading to a varying extent of negative impact on collaboration.

The critical distinction between the public and the private project set-up arises from the political landscape and probity issues that strive for elevated levels of formal governance mechanisms. These could create additional boundaries contributing to bureaucracy. However, this does not necessarily mean that collaboration in a public sector project will always be tainted by the above-identified contextual issues. Clients taking leadership and designing conscious and balanced control mechanisms, along with the sensible service provider selection, can create an atmosphere conducive to collaboration in public sector construction projects.

Just *how* public sector clients can introduce informalities within traditional procurement systems to generate collaboration, is an area awaiting academic investigation. The findings of this case study highlight the need for further research into how different forms of psychological boundaries are created in the project environment and how they can be managed to minimize the damage to fostering genuine collaboration.

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