

Effect of Construction Business Relationship Situation on Design Service Delivery in Ghana

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Abstract

Literature describes the construction business relationship (CBR) situation in developing countries like Ghana as harsh, adversarial and non-collaborative, resulting in several business relationship challenges among Design Service Delivery (DSD) actors. This non-collaborative business relationship situation causes discords, disputes and conflicts (DDC), affecting improvement of DSD activities. This paper seeks to describe the current CBR situation among DSD actors in the Ghanaian construction industry (GCI) and its effect on development and constitution of supply chains of information flow (SCIFs). Drawing on action-oriented system theory, system thinking and rethinking approaches the current CBR situation among DSD actors are isolated for their conceptual and empirical understanding. A case study approach was used to achieve the study objectives and the data was analysed using content analysis and pareto analysis. A stringent eligibility criteria enabled nine different professional groups of five DSD actors each to be purposively selected for the study. Fourteen percent (14%) of DSD actors described the current CBR situation as “lacking harmonization of professional work and good business relationships” and “hostile, frustrating, with tension and conflicts”, 13% described the situation as “lacking interdependencies and sustainability” and 9% described it as “having mixed relationships of affiliates and training mates relationships” among others. The resultant effects of the current CBR situation among DSD actors include “difficulties in sharing and exchanging information”, “disturbance of time schedule/control”, “reduction in quality of work”, and “cost ineffectiveness”. The paper makes an important theoretical contribution to knowledge by providing empirical description of the current CBR situation and its effect on design service delivery in the construction industry, especially in the context of developing countries. It brings to the fore the need for proactive management action to help address the situation in developing countries such as Ghana.

Keywords: construction business relationship, design service delivery, Ghana, supply chain of information flow

1. Introduction

Construction business relationship concerns working associations or ties between or among individuals or parties in construction activities (Jiang et al., 2012; Hawkins, 2011). Construction business relationship is a kind of association which develops among individuals or parties (actors) engaged in construction. It encompasses both internal and external relationships of parties in organizations such as a Design Service Delivery (DSD) entity (Hawkins, 2011). The associations or the connections which exist between/among the actors are nurtured on some useful relationship factors such as collaboration, trust, communication, commitment, improvement and continuous improvement, marketing skills, alignment of objectives, joint problem solving, risk handling/allocation among others (Meng, 2010).

A number of studies suggest that adversarial relationships and poor communication practices are common in the construction industry (Anim, 2012; Laryea, 2010; Pryke, 2009; Yiu & Cheung, 2006; Anvuur et al., 2006). This situation has adverse effects on supply chains of information flow (SCIFs) and business relations. These relationship challenges come from the entrenched situation of over-reliance on culture involving professional autonomy, lack of interdependency and mistrusted relationships which disturb collaborative practices (Jaffer et

al., 2011; Laryea, 2010; Chan et al., 2004; Latham, 1994). There have also been several attempts in the literature towards recommended collaborative initiatives such as alliancing (Yeung et al., 2007), partnering (Bresnen, 2007; Alderman and Ivory, 2007; Kadefors et al., 2007; Wong and Cheung, 2004; Naoum, 2003; Bresnen and Marshall, 2002) and integration of teams (Baiden et al., 2006) which are not frequently applied in development of the SCIFs. The real effects of these collaborative initiatives are not clearly understood, especially in the context of developing countries (Anim, 2012; Pryke, 2009).

The business relationship situation in which most construction works contracts are procured by design service delivery (DSD) actors (DSD practitioners and contractors) are indeed non-collaborative and harsh or adversarial (Laryea, 2010; Anvuur et al., 2006). This trend of business relationship undermines not only products of contracting but also DSD activities (Odusami et al., 2003). Despite the several evidence of non-collaborative and adversarial relationships documented in literature, the real characteristics of the construction business relationship (CBR) situation and their actual effect on SCIFs and business relations among the DSD actors are not clearly established and documented. Using the Ghanaian situation, this paper makes important contribution by bringing to the fore the exact characteristics of the CBR situation and the actual effects it has on SCIFs and business relations among the DSD actors in the construction industry. Thus, while this paper lends credence to the fact that the CBR is non-collaborative and adversarial in nature, further evidence drawn from both qualitative and quantitative approaches describe the characteristics of the current business relationship situation and its actual effects on DSD activities regarding the production of SCIFs and business relationships.

2. Literature Review

2.1 Design Service Delivery (DSD)

The DSD activities involve actor groups whose construction business contributions are essential for an effective and efficient development of SCIFs (Edum-Fotwe et al., 2001). For the SCIFs to benefit from regular contribution from the different actor groups is greatly dependent on or associated with the kind of construction business relationship which exist among them (Hawkins, 2011). As noted in the Science Applications International Corporation, SAIC (2002, p. 3), “a business relationship provides a mutual forum in which the goals and influences that affect the achievement of a desired objective interact”. In this sense, the objectives desired to be achieved by the DSD actors are the development and use of SCIFs for construction projects (Hatmoko and Scott, 2010). Further, successful construction business relationship is about the DSD actors achieving some pressing individual and collective goals and objectives as successfully as their respective responsibilities required (SAIC, 2002; Yeo & Ning, 2002) Also, the business relationships must be structured to allow for maximum chance to realize a win-win-win situation for impartial benefits to all clients and the DSD actors (Pryke, 2009; SAIC, 2002).

The design service delivery provides an arena for construction design interaction requiring harmonious, cordial business relationships among DSD actors to produce useful dynamics to achieve DSD collaborative businesses (Anim, 2012; Hawkins, 2011). However, very often, proper and appropriate development of construction business relationships as useful ingredient for cordial and successful development of SCIFs, are neglected. The neglect occurs as a result of oversight due to overemphasis on approaches used in planning, sourcing, making and delivering SCIFs and including overzealousness to obtain more contracts (Hawkins, 2011; Yeo & Ning, 2002). Due to the weaknesses in the DSD activities, development of the construction business relationship often escapes the DSD practitioners who work as professionals trained in project management, architecture, structural engineering, quantity surveying, geomatic engineering, services engineering, geotechnical engineering, and planning, producing primary information flow. It is supposedly happening through the notion that the practitioners have right genes, insights and sufficient education to develop and sustain cordial relationships (Hawkins, 2011). For that matter, the collective DSD activities of developing and constituting SCIFs, the CBR is brushed aside with perhaps only maintenance of relationships between the clients and individual professionals (Hawkins, 2011; Seebass, 2008; Gouveia & Ros, 2000).

The contractors who receive and use the information from initiation, planning, executing, controlling to closing of a project experience the most significant form of harsh or adversarial CBR in the Ghanaian construction industry (Laryea, 2010). DSD practitioners or professionals who are either in-house or external consultants working in firms for clients have a lot of CBR challenges with contractors (Jaffar et al., 2011; Orgen et al., 2011; Laryea, 2010). These are professionals who form part of clients' organization and need to develop the appropriate culture through change of mind set for cordial relationships (Cheung & Rowlinson, 2005). This change of relationship culture should be treated as urgent by the agents of principals (clients) who run agencies for DSD works, producing SCIFs for selected contractors (Hawkins, 2011; Cheung & Rowlinson, 2005). The

DSD practitioners provide the SCIF which are different from other supply chains such as the flow of materials, labour, plant and equipment including temporary work (Hatmoko & Scott, 2010).

These supply chains of information flow consists of chains of project documentations such as drawings, bill of quantities, specifications, contract conditions, spot levels, geotechnical reports, explanations and clarifications, which form the basis of all activities in the project (Edum-Fotwe et al., 2001). The DSD works of providing SCIFs are for decision-making, which affects planning, executing, controlling and closing of projects. Thus, it is obvious that DSD practitioners are responsible for all other conduct, of sharing information between the supply chain members. So, failure to manage the CBR for the best development of SCIFs has profound consequences on general construction project delivery (Hawkins, 2011; Titus, 2005). This is because the information sharing among members is seen as key to effective and efficient supply chain management of projects (Hatmoko & Scott, 2010; Titus, 2005). Hence, delay in the supply chain of information flow may slow down decision-making of all the project teams. This phenomenon is identified as the main cause of delay in projects delivery (Chan & Kumaraswamy, 1997).

However, in the current CBR situation, DSD actors are observed to have a lot of relationship instability which cause discords, disputes and conflicts (DDC) leading to non-collaborative and harsh or adversarial relationship, having various effects on the improvement of DSD activities (Orgen et al., 2012a; Laryea, 2010; Anvuur et al., 2006; Proenca & De Castro, 2005). Such CBR challenges or problems, which cause delays in developing and constituting SCIFs, might slow down decision-making of all the project teams and this situation is identified as the main cause of delays in projects deliveries (Ramus & Birchall, 2006; Sahin & Robinson, 2002; Chan & Kumaraswamy, 1997). Besides, these problems are potential sources of DDC. They further create a relationship instability cycle which leads to continuous delays and subsequent destruction of all project objectives or abandonment of projects (Ramus & Birchall, 2006; Proenca & De Castro, 2005).

As built environment professionals in a developing country, DSD practitioners, including contractors, face further CBR challenges emanating from uncertainties of weak economies, which do not encourage building of effective relationships or developing stable relationships (Hawkins, 2011; Proenca & de Castro, 2005). The challenges become pronounced by the highly fragmented characteristics of the construction industry reiterated in several literature and low levels of trust existing among the actors (Jiang et al., 2012; Pryke, 2009; Bresnen, 2007; Baiden et al., 2006; Naoum, 2003; Bresnen & Marshall, 2002; Egan, 1998; Latham, 1994). The relationships and other responsibilities turn to push aside the need for the development of appropriate DSD collaborative construction business relationships (Anim, 2012; Hawkins, 2011).

The scale of CBR effects in developing SCIFs eludes DSD actors as they seek more contract opportunities (Hawkins, 2011). Such an elusive situation has increasingly encouraged the loss of sight of the threats relationship failures posed to the developmental efforts of seeking mergers in developing and constituting SCIFs (Hawkins, 2011). This makes the elimination or reduction of adversarial business relationship a mirage, disturbing or drawing back improvement of the DSD activities (Jiang et al., 2012; Hawkins, 2011). For instance, as the DSD actors become aggressively desirous to win and gain from contracts, the intention for harmonious, cordial business relationships among DSD actors to produce dynamics in the DSD collaborative businesses is usually constrained (Anim, 2012; Hawkins, 2011). These are illustrated in the statement of Pryke (2009) supported by Skitmore and Smyth (2007). They report that non-collaborative behavioural culture and adversarial business relationship in some developed economies like the UK is characterized by cost cutting of tender figure or projects cost.

In Ghana, the situation of CBR in the most common traditional system of procuring contracts, where design is separated from production, causes divisions among DSD actors with some clients' requirements/decisions failing to appear in tender documents these leading to variations in the construction phase (Laryea, 2010; Anvuur et al., 2006). Besides, CBR challenges like poor communication cause the SCIFs to be characterized sometimes as inconsistent and lacking coherence with law and best practices (Hatmoko and Scott, 2010; Public Procurement Authority, PPA, 2010b; Chan et al., 2004; Latham, 1994). It is in similar view that Odusami et al. (2003) indicated that it is not uncommon to observe Nigerian construction industry uncoordinated supply chains of information flow for DSD activities. These problems occur partly as a result of lack of proper allocation and location of authority of control among the DSD practitioners for the improvement of the DSD activities (Orgen et al., 2011, 2012a).

The problems are compounded by the fact that a research carried out into causes of cost overrun, indicated that five out of eight problems identified are design management related (Odusami et al., 2003). The problems, which are not different from some of CBR issues in Ghana, include non-compliance of design with planning or

statutory requirement, incomplete design at the time of going to tender, lack of co-ordination, ambiguity of risk allocation and inadequacy of management control (Odusami et al., 2003). These problems keep surfacing because no evidences are found to show that the DSD actors consider CBR as critical collective ethos and persona for effective and efficient development of SCIFs to improve the DSD activities (Hawkins, 2011).

On the contrary, what is realized frequently is who is best placed to lead the project team or the DSD practitioners is another major source of controversy bleeding DDC, which sometimes ends in non-co-operation and adversarial business relationship amongst the DSD practitioners (Orgen et al., 2011, 2012a). These occurrences are common especially where actors who are not project managers claim to be one (Ahadzie et al., 2014). In Ghana, the enactment of the Public Procurement Act 2003, Act 663, in which recognition is now given to the title Project manager (PM) is very striking in the annals of procurement practices in Ghana. Hitherto, the articles of agreement mentioned the architect for especially building works and engineer for civil engineering works. However, a lot of collaborative work still rests on the shoulders of both the DSD actors and clients (largely government) to change the existing CBR which causes the non-collaborative and harsh and adversarial nature of the traditional approaches responsible for poor managerial and administrative fragmented practices associated with projects (Anim, 2012; Hawkins, 2011).

For CBR to be trustingly or adversarial oriented is in no doubt too simple a view as both strategies co-exist as regards to human attitudes and behaviours. However, the profound worry is that the latter can destroy completely all project objectives or the improvement of the DSD activities (Jiang et al., 2012; Orgen et al., 2012a; Ramus & Birchall, 2006).

Building business relationships are becoming increasingly accepted as developing key success factors, without which, construction or any other business cannot thrive (Hawkins, 2011). It will be much helpful to understand that the construction business relationships, like any other business relationship, are multidimensional. The broad view concerning business relationship is that it carries along values; but there is a huge potential risk if relationships fail in activities of an entity, like the DSD activities (Hawkins, 2011). For that matter, if under any circumstances like a delay in the arrangement or execution of an activity, this can be viewed in some way as lack of commitment, which is one of the business relationship factors that can cause a long serious defect to the DSD relationship. This is because delays can instigate negative effects like costs overruns, low or loss of profits, increased DDC and subsequent huge payment in many lawsuits between clients and DSD actors with sometimes contract termination (Owolabi et al., 2014).

The literature is replete with several evidence of issues that cause non-collaborative working and adversarial business relationships situations among DSD actors (DSD practitioners and contractors). However, CBR situation has not gained from extensive and concerted investigation into its effects on DSD activities. This study and the discussion which follow provide further empirical evidence describing the characteristics of the current business relationship situation and its actual effects on DSD activities regarding the production of SCIFs and business relationships. These can assist DSD actors to agree on common procedures that will have real impact on the situation for DSD actors' efforts to build collaborative businesses for effective SCIFs to improve the DSD activities.

2.2 Construction Discords, Disputes and Conflicts in Perspective

Contentious issues in construction, which generate construction Discords, Disputes and Conflicts (DDC), ending in non-collaborative and adversarial relationship can be associated to a definition in Social Psychology literature. Heidelberg Institute for International Conflict Research (2005) defines DDC as the clashing of interest (positional differences) on national/group/individual values of some duration and magnitude between at least two parties (organized groups, state, organizations, individuals) that are purposefully pursuing their interest and win their cases (Axt et al., 2006; Yiu & Cheung, 2006). Basically, humans are by nature social beings, forming groups out of shared interests and needs (Vold, 1958; Misis, 2010) and in the process generate DDC due to differences in interest, which sometimes result in non-collaborative working and adversarial business relationship.

The intentions among the various DSD actors are to form groups or teams to achieve shared interests and needs but the egoistic tendencies revealed in attitudes and behaviours take control of the DSD human attitudinal behaviours, ending in increased in-ward looking, dishonesty, less or no communication, non-commitment, increased competition and lack of concern for others (Williams & McShane, 2010; Misis, 2010). The issues of egoistic tendencies are similar as according to Williams and McShane (2010) which are also confirmed in the work of Misis (2010). The works of Misis show that the interests and needs of DSD groups interact and produce competition over maintaining and/or expending one group's position relative to others in the control of valuable

resources (money, time, new projects, education, information and the like).

Granted that the differences in interests among humans are a potential source of such DDC, it is not surprising that there exists an adversarial business relationship among the DSD practitioners and between them and contractors (Yiu & Cheung, 2006). The disturbing and unacceptable aspect is that such attitudinal behaviours drawback construction project performance due to lack of alignment of interests and objectives of partners (Lee, 2006).

2.3 Theoretical Framework

Construction DDC arises frequently over items or issues which are considered consensually valuable as in conflicts in other fields of endeavour (Dahrendorf, 1959; Axt et al., 2006). In giving further details, the great sociologist, Deutsch (1973) clearly delineate five basic issues over which conflict could arise namely: control over resources, preferences and nuisances, beliefs, values, or nature of the relationship. In the construction industry and by the foregone distinction of issues of conflicts, there is indication that a limited number of projects and time-bound projects/consequences such as liquidated ascertained damages, have potentials to cause DDC (Yiu & Cheung 2006).

The usual trend of DDC passes through certain intensity scale with a series of phases such as: beginning phase, developmental phase and end phase (Axt et al., 2006; Yiu & Cheung, 2006). It is this kind of dynamic development that produces DDC in phases and contributes to persistence of non-collaborative working and adversarial business relationship. Actually, it is the dynamics, the intensities and the persistence of the DDC that disturb or disallow collaborative working, business relationship development, preservation of business relationship improvement and continuous improvement in DSD activities (Axt et al., 2006). The characteristics of the business relationship situation in which SCIFs are developed and constituted and the culture issues also contribute to DDC consequently affecting DSD activities.

Hofstede (1986) in a famous research on culture realised that human behaviour is not random but predictable. People carry mental plans and agenda that can be seen indirectly through attitudes and behaviours shown. The plans and agenda of the DSD actors in developing and constituting SCIFs, like all other humans, influence their collaborative or non-collaborative decisions, policies, beliefs and attitudinal behaviours in dealing with all DSD activities. Most especially the first three factors out of four cultural dimensions or factors that Hofstede (1986) established: power distance, individualism-collectivism and avoiding uncertainty, masculinity and femininity clarify the situation (Gouveia & Ros, 2000).

Figure 1 represents the conceptual framework illustrating the construction business relationships existing among the DSD actor groups. By theorization it is noted as indicated in figure 1 that, the effects of the existing non-collaborative and harsh or adversarial situation lead to weak or failure business relationships. The framework draws on action oriented system theory, theory of action and system theory thinking and rethinking-in multi-theory building (Jugdev, 2004; Harriss, 1998; Seymour et al., 1997). In multi-theory building, the system theories discussed are taken as integral part of the rethinking processes (Pickel, 2007). Further, in the Rethinking System Theory (RST) each system takes all other systems as its environment (Global and Ghanaian), an ontological position that allows greater flexibility in the conceptualization of systems than that based on the part to whole distinction (Pickel, 2007, 2004). In this regard, a system cannot be defined only by the set of elements: structure, components and their relations to an environment. There is the need for the inclusion of the actual processes mechanism (bond) that make the system a system, which in the complex real-world allows self-organisation (Orgen et al., 2013a, 2012b; Pickel, 2007). These assisted in drawing the effects of the CBR on the DSD activities.

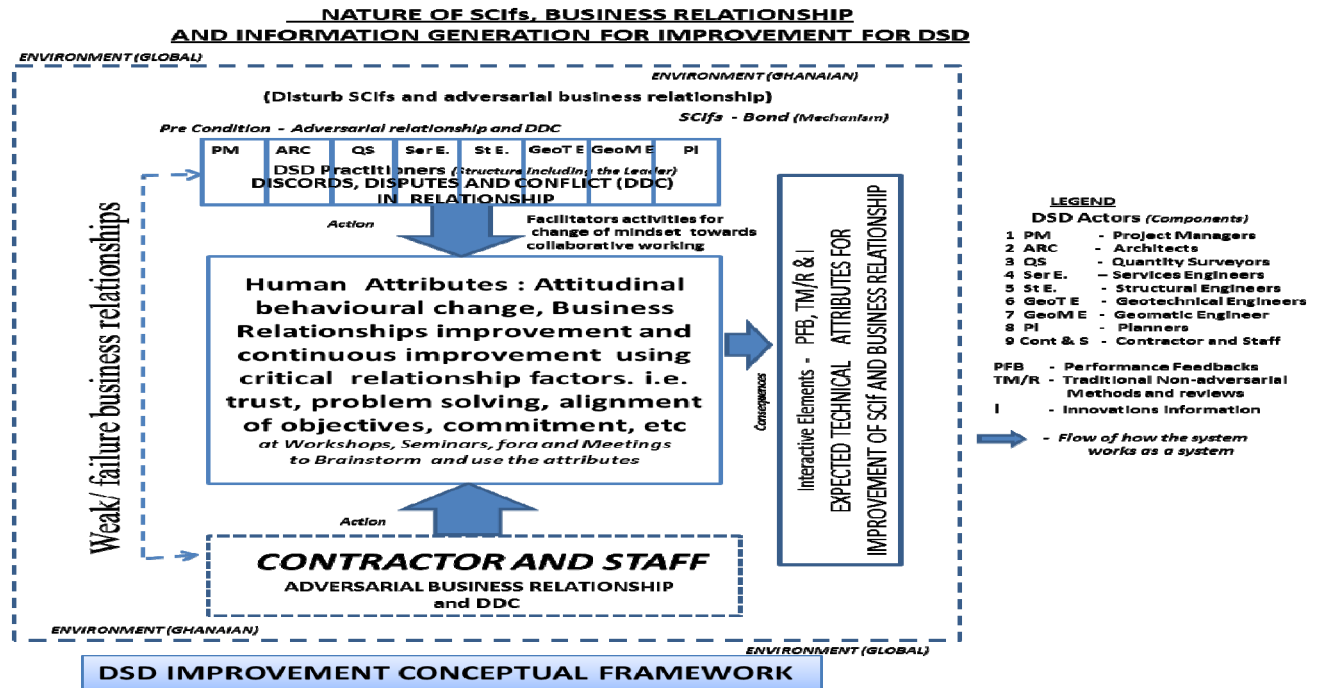


Figure 1. Conceptual framework for improvement of DSD activities

According to Bunge (2004), “systemism” is like holism. The difference is that it encourages analysis of wholes into their constituents and as a result is never in harmony with the intuitionist epistemology inherent in holism. Therefore, the DSD practitioners and contractors should be treated as the producers of any social whole (ie DSD activities).

Coleman and Ostrom (2011), Seebass (2008) and Tuomela (1991) also indicate that Theory of Action (TA) is intention-driven. Relevant aspect of the TA required in this theorization regards collective action from all DSD actors. It is a kind of collective action that is based on the following steps: pre-condition, action and results or consequences. The TA is concerned with I-intention of an action, weaker than the other, We-intention or We-sense. This is explained further that the separate action of an individual is not comparable to the joint action of individuals in a group. The joint goal depending on “We thinking” or effort of the We-intention, for example, to assess DSD improvement or to improve DSD activities is stronger than the I-intention (Coleman & Ostrom, 2011). Application of the “We-intention or We thinking” to make SCIFs effective and efficient are concerned with act-relational intentions. An act-relational intentions produces full blown stronger “We-sense” of effective and efficient collaborative working to reduce cost, time and achieve high quality design service delivery. The achievement of success in the DSD activities is caused by the joint effect of We-intention (Tuomela, 1991). This offer inputs and outputs for the multi-system theorizations, showing the aspect of TA essential for collaborative working and appropriate business relationship (Seebass, 2008).

Another theory used in conjunction with the TA in the theorization process is the System Theory (ST). ST is an interdisciplinary theory about every system in nature, in society and in many scientific domains as well as a framework which can be used to investigate phenomena from a holistic approach (Mele et al., 2010). A system from multidisciplinary point of view is defined as an entity, which is a coherent whole (Mele et al., 2010; Ng-Maull & Yip, 2009) with perceived boundary around it in order to distinguish internal and external elements such as: clients, sub-contractors and construction suppliers’ activities outside the DSD entities. It also identifies input and output connected to and emerging from the entity. On this basis, Mele et al. (2010) stated that ST is a theoretical perspective that analyses a phenomenon seen as a whole ie DSD activity and not as simply the sum of elementary parts, like the individual professional SCIF works (DDC sub-SCIFs) or separate works of the individual DSD actors (Orgen et al., 2013a).

Another important aspect of the ST useful in strengthening this theorization is the system thinking developed from a shift in attention from the parts to the whole (Orgen et al., 2013a, 2012b; Mele et al., 2010). This shift occurs in a way that makes the sub-SCIFs integrate and in interact in a situation of handling a DSD phenomenon

that reveals properties of single parts. These parts are different professions such as Project manager (PM), Architect (Arc), Quantity surveyor (QS), Services engineer (Ser Eng), Structural engineer (St Eng), etc, distinctly as “I” s or be in absolute union as system elements (i.e. sub-SCIfs or DSD actors work rationally connected) (Mele et. al., 2010) (see Figure 1). The core problem of system thinking revolves around causation and reductionism (Pickel, 2007). This respect can further be explained by the rethinking system theory (RST) “systemism”.

3. Method

An extensive literature review was conducted into the construction business relationship situation among DSD actors in developing and constituting SCIfs. A qualitative strategy was used for the study (Baxter & Jack, 2008; Zainal, 2007). It was useful for the purpose of describing the current CBR situation and for studying the actual effects of the situation on DSD activities (Baxter & Jack, 2008). In this qualitative research, descriptive case study design was employed which enabled the necessary multi-theory theorizations to be carried out on CBR in the discussions (Zainal, 2007).

The non-probability purposive non-proportional quota sampling was most suitable and was used for the study (Gravetter & Forzano, 2006; Landreneau & Creek, 2003; Kumekpor, 2002; Greemstein, 2001). The purposive approach was necessary as the DSD population had a distribution which was found in two to three urban centers in Ghana (Kumekpor, 2002). Also, to obtain a sample with representative views of the DSD population, five-point eligibility criteria involving a minimum of ten years working experience after obtaining professional association membership, size (scale) of projects undertaken, number of DSD actors involved in the execution of projects, professional status and local, national or international awards obtained (Baxter & Jack, 2008; Devers & Frankel, 2000) were considered.

One Hundred and Thirty-two DSD actors were present in the various organizations, out of which 50 DSD actors comprising 13 public and 37 private organizations satisfied the interview eligibility criteria (Kumekpor, 2002; Devers & Frankel, 2000). Based on the use of non-probability purposive non-proportional quota sampling only 45 senior DSD actors (i.e. Executive Officers or Directors of the organizations) were selected out of the 50 for the interview (Gravetter & Forzano, 2006; Landreneau & Creek, 2003; Kumekpor, 2002; Greemstein, 2001; Devers & Frankel, 2000). The sample frame eligibility criteria set, drew into the research some finest DSD experts in Ghana who have rich experiences and familiar with DSD professional practice (Devers and Frankel, 2000). In-depth interviews were carried out among DSD practitioners, including contractors who used the final design. In-depth interviews were conducted among the 45 interviewees, 5 from each of the 9 different DSD professions in Ghana, using an interview guide of semi-structured open ended questions (Yin, 2003).

In the first phase of the face-to-face in-depth interviews, eighteen DSD interviewees were involved; two from each of the 9 different professions, in an average time of three hours per interviewee. This enabled an initial identification of categories of issues that the measuring instrument should cover as a follow up in the CBR data collection (Naoum, 2004). The categories of issues were useful in seeking justifications and other follow up explanations concerning the effects of the CBR on the DSD activities in the data collection from the other twenty-seven (27) DSD interviewees to saturate the information obtained (Fellows & Liu, 2003). Data was electronically recorded, detailed summaries were written down by each interviewee and relevant observations were recorded by the researcher. The data was collected during working hours when the various offices were in session and staff was busy at work (Baxter & Jack, 2008). Data from 5-DSD actor groups of nine different professionals in a group was obtained. The actor groups’ views of the case were studied and discussed as obtained.

Examination, coding, grouping of themes and categorisations to realize the research objectives were carried out for reliability and validity (Baxter & Jack, 2008; Devers & Frankel, 2000). The three kinds of content analysis approaches involving conventional, directed and summative methods were used (Hsieh & Shannon, 2005).

4. Results

4.1 Details of DSD Organisations Visited

Table 1 presents the details of the DSD organizations involved in the study.. The 45 senior DSD actors who were sampled comprised 9 public and 36 private actors. Table 1 also presents the details of the 5 DSD actors who were interviewed in both the public and private organizations to make up the sample size of 45 interviewees, including Project Managers, Architects, Quantity Surveyors, Geotechnical Engineers, Geomatic Engineers, Planners and Contractors. Each of these professionals had at least 10 years working experience, and therefore familiar with DSD professional practice.

Table 1. Details of DSD organizations visited

Type of Organization	No. of Organization visited	No. of DSD actors in Organizations	No. of DSD actors who met the interview criteria	Type of DSD actors who meet the interview Criteria	Actual No. of DSD actors interviewed	Type of DSD actors interviewed
Public	9	52	13	Project Managers (No. 2) Architects (No. 1) Quantity Surveyors (No. 1) Geotechnical Engineers (No. 2) Geomatic Engineers (No. 2) Planners (No. 5)	13	Project Managers (No. 2) Architect (No. 1) Quantity surveyors (No.1) Geotechnical Engineers (No. 2) Geomatic Engineers (No. 2) Planners (No. 5)
Private	36	80	37	Project Managers (No. 3) Architect (No. 4) Quantity Surveyors (No. 5) Services Engineers No. 5) Structural Engineers (No. 6) Geotechnical Engineers (No. 4) Geomatic Engineers (No. 5) Contractors (No. 5)	32	Project Managers (No. 3) Architects (No. 4) Quantity Surveyors (No. 4) Services Engineers (No. 5) Structural Engineers (No. 5) Geotechnical Engineers (No. 3) Geomatic Engineers (No. 3) Contractors (No. 5)
Total	45	132	50		45	

4.2 Characteristics of the Current Construction Business Relationship Situation in Ghana

Table 2 shows that twelve attributes are used by the 9 professional actor groups to describe the current CBR situation in which SCIFs are developed and constituted. These include “lack of harmonization of professional work and good business relationships” and “hostility, frustration, tension and conflicts” with frequency of 14% each. Besides, there are “lack of interdependencies and sustainability” and “mixed relationships of affiliates and training mates relationships” (colleagues or school mates) with frequencies of 13% and 9% respectively. Four other attributes with frequencies of 7% each, were used to describe the current CBR situation including “low motivation”, “no command structure”, “harsh system of falsification of documents and greed” and “misinterpretation of documents by DSD actors”. The remaining four attributes with frequencies of 5% each, are “business-like relationships”, “detrimental competition”, “no agreed practitioners cost inputs on works” and “client dissatisfaction”.

Table 2. Emerging Attributes describing the current construction business relationship situation in which SCIFs are developed and constituted

Subcase (Category 2): Details of current construction business relationships situation												
Attributes describing sub-case: current construction business relationships												
Situation												
DSD actors (Professional interviewee groups)	(A1) Lack of harmonization of professional work an good business relationships	(B1) Hostility frustration , tension and conflicts	(C1) Lack of interdependencies	(D1) Mixed Relationships of affiliates and training	(E1) Low motivation	(F1) No command structure	(G1) Harsh System of Falsification of	(H1) Misinterpretation of documents by DSD	(I1) Business-like relationships	(J1) Detrimental competition	(K1) No agreed practitioners	(L1) Client dissatisfaction
Project Managers (5No.)	✓			✓		✓	✓					
Architects (5No.)	✓		✓	✓				✓		✓✓✓		
Quantity Surveyors (5No.)			✓✓	✓		✓	✓				✓	
Services Engineers (5No.)	✓		✓						✓			✓
Structural Engineers (5No.)	✓	✓			✓	✓		✓				
Geotechnical Engineers (5No.)	✓✓✓	✓	✓✓		✓		✓	✓	✓		✓✓	
Geomatic Engineers (5No.)		✓✓		✓✓	✓		✓	✓				✓
Planners (5No.)	✓	✓✓	✓			✓			✓			✓
Contractors (5No.)		✓✓			✓							
Total of attribute	8	8	7	5	4	4	4	4	3	3	3	3
Percentage	14	14	13	9	7	7	7	7	5	5	5	5

*Key: ✓ = Emerging attributes

Figure 2 shows a pareto plot of the attributes describing the current CBR situation in which SCIfs are developed and constituted in Ghana. The pareto plot is useful for ranking the attributes and also for selecting the critical ones for remedying. The plot shows eight critical attributes including “lack of harmonization of professional work and good business relationships” and “hostility, frustration, tension and conflicts” each with frequency of 14%. These also involve “lack of interdependencies and sustainability” with frequency of 13% and “mixed relationships of affiliates and training mates relationships” with frequency of 9%. The other four critical attributes are “low motivation”, “no command structure”, “harsh system of falsification of documents and greed” and “misinterpretation of documents by DSD actors” each with frequency of 7%.

Of the eight critical attributes identified using the pareto plot (Fig. 2) as attributes describing the current CBR situation in Ghana, seven are negative attributes pointing to business relationship challenges. The negative critical attributes include: “lack of harmonization of professional work and good business relationships”, “hostility, frustration, tension and conflicts”, “lack of interdependencies and sustainability”, “low motivation”, “no command structure”, “harsh system of falsification of documents and greed” and “misinterpretation of documents by DSD actors”. The positive attribute identified, however, is “mixed relationships of affiliates and training mates relationships” for example, colleagues or school mates. The cumulative percentage curve rises smoothly with each additional attributes until it crosses the horizontal line to obtain the maximum value of 100, making use of all the values of the bars in the chart. The bars to the left of the point of intersection of the curve and the horizontal line indicate the critical emerging attributes with potentials to describe more than eighty percent effects of the CBR situation on DSD activities. The remaining bars emerging attributes in the pareto chart to the right of the intersection are the “trivial attributes” which have less significant descriptive effects on the CBR situation.

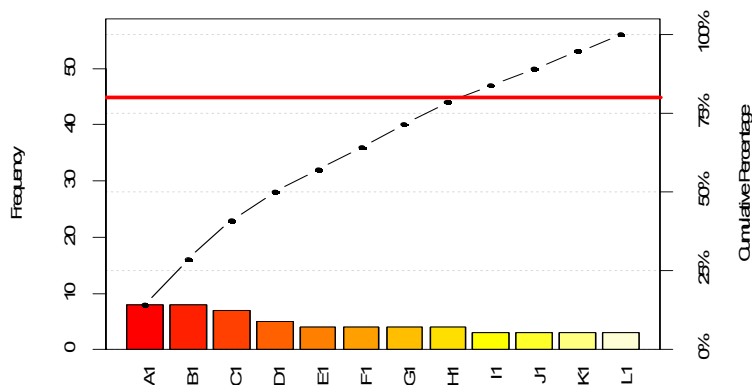


Figure 2. Pareto plot showing attributes describing current construction business Relationships situation in Ghana

Legend

A1 to L1 - Attributes in Table 2

A1 to H1 - Critical attributes in Table 2

4.3 Effect of Construction Business Relationship situation on DSD Activities

Table 3 presents a summary of the DSD actors’ description of the effects of the current CBR situation on DSD activities in Ghana. The effects identified from the study included among others lack of time control and delays in DSD activities, reduction in quality of the DSD products, cost ineffectiveness, lack of feedbacks and information inflow and outflow, shoddy work, confrontational issues, lack of effectiveness and efficiency.

Table 3. Summary of DSD actors' description of effect of construction business relationship situation on DSD activities

DSD actors (Professional interviewee groups)	Summary of the Effects of Business Relationship Management situation on the improvement of DSD Activities
Project Managers	Cause delays in DSD activities, disturbing improvement in DSD time schedules. However, there are improvements in quality of DSD activities and value for money of some SCIFs obtained through collaborative master programmes.
Architects	Reduce quality of DSD design products and also make SCIFs cost ineffective. But the situations are different where competent actors improve the DSD activities
Quantity Surveyors	Disturb effectiveness and efficiency of SCIFs blocking expansion and improvement of quality of DSD actors/products and encourages shoddy works
Services Engineers	Cause drawback improvement of DSD encouraging unhygienic and haphazard infrastructure activities.
Structural Engineers	Reduce quality of SCIFs and make DSD less cost effective. But in some few situations improve the DSD activities by reducing errors to achieve lower cost and save time.
Geotechnical Engineers	Disturb information sharing and disallow effective developing of SCIFs through a lot of confrontational issues that affect the improvement of the quality of SCIFs. However, some situations foster the right frame of mind to exchange project information freely to improve DSD products of SCIFs in legal and cost control terms.
Geomatic Engineers	Prevent a holistic approach in developing and constituting SCIFs. These affect standards and ignore important details which prevent meaningful improvement in quality, cost and time control of DSD activities in project life cycle.
Planners	Result in incomplete SCIFs which are ineffective, inefficient and substandard, affecting the improvement of DSD activities by ignoring procedures, unwillingness to learn and to adopt changes. Also, cause unstable development from poorly constituted SCIFs to improve the DSD activities through knowledge acquired in other design.
Contractors	Create difficulties in inflow and outflow of project information which is required for SCIFs. These disturb improvement of DSD cost control and time due to non-compliance to regulations, rules and other legal issues. These, however, cause defects in the SCIFs that affect improvement of total quality, cost and time of the DSD activities.

4.4 Discussion Relating to Characteristics of the Current Construction Business Relationship Situation

Attributes used by the different DSD actor groups to describe the characteristics of the current CBR situation as given in Table 2 assisted and strengthened the interpretations provided for the various responses from the groups (Fellows & Liu, 2003).

Of the eight critical attributes identified using the pareto plot (Fig. 2), all the 9 DSD actor groups, except the Quantity Surveyors, the Geomatic Engineers and the Contractors, used “lack of harmonization of professional work and good business relationships” with frequency of 14% to describe the current CBR situation. These critical attributes are confirming the existence of non-collaborative and harsh or adversarial relationship (Laryea, 2010; Anvuur et al., 2006). Five DSD actors including the Structural Engineers, Geotechnical Engineers, Geomatic Engineers, Planners and the Contractors used “hostility, frustration, tension and conflicts” with frequency of 14% to describe the current CBR situation, and another group of 5 DSD actors including the Architects, the Quantity Surveyors, the Service Engineers, the Geotechnical Engineers and the Planners used “lack of interdependencies and sustainability” with frequency of 13%. The critical attributes used by the actors suggest that evidence are available for DDC which disturb business relationship among the DSD actor groups for the improvement of DSD actors (Axt et al., 2006; Yiu & Cheung, 2006). The Project Managers, the Architects, the Quantity Surveyors and Geomatic Engineers used “mixed relationships of affiliates and training mates relationships” with frequency of 9% to describe the current CBR situation. It can be inferred from the critical attributes used that DSD actors engaged or employed are not wholly based on performance or competencies (Orgen et al., 2011; Laryea, 2010; Cheung & Rowlinson, 2005). The remaining 4 of the 8 critical attributes were each used by four DSD actor groups with frequency of 7%. The frequency of usage of each of the critical attributes indicates the level of appropriateness of the description to the current CBR situation. Thus, the descriptions “lack of harmonization of professional work and good business relationships” with frequency of 14%, “hostility, frustration, tension and conflicts” with frequency of 14%, “lack of interdependencies and sustainability” with frequency of 13% and “mixed relationships of affiliates and training mates relationships” with frequency of 9% are more appropriate to the current CBR situation than the others. The CBR situation illustrated by these critical attributes suggest little severer situation than those advanced in work Laryea (2010); Cheung and Rowlinson (2005), but in line with that of Axt et al. (2006) and Yiu and Cheung (2006).

The use of “lack of harmonization of professional work and good business relationships” to describe the current CBR situation shows that majority of the DSD actors see the current CBR as lacking enough cordial or smooth relationship for free open system to share or exchange project information. These can be inferred to be not similar to open system explained in the study of Anim (2012); Mele et al. (2010) and Loo (2003). The use of “hostility, frustration, tension and conflicts”, is evidence in support of the true issues underpinning the lack of harmonious professional relationship among DSD actors in Ghana. Hostility, frustration, tension and conflicts generate DDC which can completely destroy any improvement of infrastructural project objectives. This attribute also serves as a potential cause of non-collaborative working and adversarial business relationship (Du Plessis, 2007; Axt et al., 2006; Yiu & Cheung, 2006; Adebayo, 2002). The use of “lack of interdependencies and sustainability” indicates non existence of inter-professional reliance (Yiu & Cheung, 2006). This indicates the existence of a close system of business relationship with individualism or “I-intention” or “I-sense” in which there is professions separatism characterized by non-collaborative adversarial business relationship (Coleman & Ostrom, 2011; Du Plessis, 2007; Yiu & Cheung, 2006; Mullins, 2005; Adebayo, 2002; Hofstede, 1986) Such business relationship situation makes improvement of DSD activities difficult (Axt et al., 2006; Yiu and Cheung, 2006). The use of the attribute “mixed relationships of affiliates and training mates” relationships’ is somehow positive, though not the best for continuous improvement. This critical attribute is used by four out of the nine DSD actor groups i.e. Project Managers, Architects, Quantity Surveyors and Geomatic Engineers. These are professionals usually seen as working colleagues in the construction industry. They are usually trained in the same College of the Universities they attended and some take common courses and share common facilities. It is therefore no wonder that they describe the current business relationship situation as having mixed relationships of affiliates and training mates’ relationships. The question, however, is whether this attribute is strong enough to result in significant improvement in SCIFs in design service delivery.

The situation of “low motivation” disturbs or distorts improvement of DSD activities, and indicates harsh or adversarial business relationship. This situation shows a close system characterized by unfair play which does not motivate DSD actor groups to be collectively collaborative in processes and procedures (Mele et al., 2010; Yiu & Cheung, 2006; Mullins, 2005). The use of “no command structure” to describe the current CBR situation shows that the individual professions have autonomous culture of no system thinking and rethinking (Pickel, 2007; Gouveia & Ros, 2000). No coordinating command structure is in place for DSD activities (Mullins, 2005), with each DSD actor group operating independently. This situation indicates the existence of a closed business relationship with individualism or “I-intention” or “I-sense” in which there is professions separatism characterized by non-collaborative adversarial business relationship (Coleman & Ostrom, 2011; Du Plessis, 2007; Yiu & Cheung, 2006; Mullins, 2005; Adebayo, 2002; 1986). The attribute “harsh system of falsification of documents and greed” can be inferred that this borders on corruption as confirmed in some previous study

(Ameyaw et al., 2013; Orgen et al., 2012a; Anvuur et al, 2006). Corruption destroys the achievement of project objectives and does not promote improvement in design service delivery. A closed business relationship with individualism or “I-intention” or “I-sense” in which there is professions separatism promotes corruption.

The Geotechnical Engineers used six of the eight critical attributes to describe the current CBR situation in Ghana. The Structural Engineers and the Geomatic Engineers each used five critical attributes, whilst the Project Managers, the Architects, the Quantity Surveyors and the Planners each used four critical attributes. The Service Engineers and the Contractors, however, used three and two critical attributes respectively to describe the current business relationship situation. This trend indicates variable views of the DSD actor groups on the current CBR situation in Ghana.

4.5 Discussion Relating to Effects of Construction Business Relationship Situation on DSD Activities

The Project Managers described the effects of the business relationship to include delays in DSD activities, causing development of SCIFs to stretch over long periods. Such delays disturb improvement in DSD time schedules as there are no collective decisions to follow (Seebass, 2008; Chan & Kumaraswamy, 1997). In the view of the Architects, the current CBR situation reduces quality of the DSD products, reduces cost effectiveness and disallows exchange of feedbacks and innovative information for SCIFs development (Anim, 2012; Loo, 2003). The Quantity Surveyors’ description was that the current CBR situation disturbs effectiveness and efficiency of the SCIFs, blocking expansion and improvement of quality of DSD products, and encouraging shoddy works.

The Service Engineers, however, stated that the current CBR situation causes drawback in improvement of DSD activities, encouraging unhygienic and haphazard infrastructural development due to lack of consultation for feedback and innovative information sharing among the actors (Anim, 2012; Loo, 2003). The Structural Engineers’ description pointed to a reduction in the quality of the SCIFs, making DSD activities less cost effective due to the narrow or limited amount of information sharing (Anim, 2012). In the view of the Geotechnical Engineers, the current CBR situation disturbs or disallows sharing of project feedback or innovative information for developing effective and efficient SCIFs (Anim, 2012; Loo, 2003). There are a lot of confrontational issues among the DSD actors which affect improvement of the quality of DSD main products of developing and constituting SCIFs (Jaffar, et al., 2011; Yiu & Cheung, 2006). According to the Geomatic Engineers’, the current CBR situation prevents holistic approach to the development and constitution of SCIFs by ignoring important details which affect standards and meaningful improvement of quality. The situation further disturbs cost and time control of the DSD activities, creating difficulties in project life cycles (Yiu & Cheung, 2006).

The Planners, however, pointed out that the current CBR situation creates incomplete SCIFs which are ineffective and inefficient, resulting in sub-standard products that affect improvement of the DSD activities. These occur as procedures are ignored, with a show of unwillingness to learn, adapt to changes and have a change of mindset for continuous improvement of DSD activities (Cheung & Rowlinson, 2005). The view of the contractors was that the current BR situation creates difficulties in inflow and outflow of project information, which are required for the development and constitution of SCIFs (Anim, 2012; Loo, 2003). This in their view disturbs improvement of DSD cost control and time schedules due to non-compliance with regulations, rules and other legal issues. The situation in turn causes defects in the SCIFs and affects improvement of total quality, cost and time of DSD activities (Yiu & Cheung, 2006; Odusami et al., 2003).

The views of all the DSD actors groups brings to the fore the issues of time, cost and quality which are the three traditional performance indicators in the construction industry (Chan, 2001)

Thus, the DSD actors are generally of the opinion that the current CBR situation does not promote, but disturbs improvement of DSD activities. Jaffaret et al. (2011) reported of three BR challenges which disturb improvement of DSD activities—contractual, technical and attitudinal behavioural relationship challenges. However, in developing and constituting SCIFs by the DSD actors, only technical and attitudinal behavioural relationship challenges are considered since business relationship among the DSD actors are non-contractual and so may not exist (Jaffar et al., 2011). Delays in DSD time schedules causing SCIFs to stretch over long periods when no collective decision or format are there to be followed (Table 2), can be a technical challenge to the development and constitution of SCIFs (Seebass, 2008; Chan & Kumaraswamy, 1997). Reduction in quality of DSD design products and cost effectiveness, which are also some of the negative effects of the current BR situation (Table 3), can be attributed to both technical and attitudinal behavioural relationship challenges. Lack of experience or competence can result in poor quality design and cost ineffectiveness, disturbing improvement of SCIF.

The results also point to the fact that information sharing among members is key to effective and efficient supply

chain management of projects (Hatmoko & Scott, 2010; Titus, 2005). The SCIf consists of documentations such as drawings, bill of quantities, specifications, contract conditions, spot levels, geotechnical reports, explanations and clarifications, which form the basis of all activities in a project (Edum-Fotwe et al., 2001). DSD activities of providing SCIfs are for decision-making, which affects planning, executing, controlling and closing of projects. Smooth information flow and information sharing can improve performance of DSD actors in developing and constituting SCIf in DSD activities. Delay in the supply chain of information flow may slow down decision-making of all the project teams, and is identified as the main cause of delay in projects delivery (Chan & Kumaraswamy, 1997).

Application of the “We-intention” or “We thinking”, an act-relational intention which produces full blown stronger “We-sense” of effective and efficient collaborative working, can help reduce cost, time and achieve high quality design service delivery (Tuomela, 1991). A shift in attention from the parts to the whole (Orgen et al., 2013a, 2012b; Mele et. al., 2010) such that the sub-SCIfs are integrated and are in absolute union as system elements of DSD activities can also help reduce the effects of the current CBR situation and improve DSD in Ghana.

Some positive effects of the current BR situation on improvement of DSD activities were reported by some DSD actors (Table 3). Some of the SCIfs achieve value for money and records improvements in the quality of DSD activities through collaborative master programmes. Such positive effects may be due to the influence of competent DSD actors who work to reduce errors, achieve lower costs and save time through fair amount of cooperation in an open system, as theorized under the system theory (Mele et. al., 2010). Some actors also create the right frame of mind through regular consultations to freely exchange project information to improve SCIf. These are demonstrations of collaborative less adversarial business relationship among DSD actors, which result in improvement of DSD activities.

5. Conclusion

The study has provided empirical evidence to support the fact that the current CBR in Ghana is adversarial and lacks collaborative relationship among DSD actors when developing and constituting SCIfs. For the description of the relationship situation using the critical attributes, 14% of the situation is characterised as “lack of harmonization of professional work and good business relationships”, 14% “hostility, frustration, tension and conflicts”, 13% “lack of interdependencies and sustainability”, 7% “low motivation”, 7% “no command structure”, 7% “harsh system of falsification of documents and greed” and 7% “misinterpretation of documents by DSD actors”. The situation, however, is also characterised as 9% “mixed relationships of affiliates and training mates relationships”. These attributes provided, in summary, characterizes the existing CBR situation in Ghana.

Some of the adverse effects of the current CBR situation which cause drawbacks to improvement of DSD activities are delays in DSD activities which disturb improvement of DSD time schedules, reduction of quality of DSD design products through ineffective and inefficient SCIfs and reduction in cost effectiveness, restriction of inflow and outflow of project information. The situation blocks expansion and encourages shoddy works, unhygienic and haphazard infrastructure development. Employing the action oriented system theory, system thinking and rethinking, will result in collaborative less adversarial relationships with collective action of “We-intentions” of joint goals, with openness and transparency in developing SCIfs by DSD actors. This will also create effective and efficient sub-SCIfs to ensure quality, cost and time effectiveness to improve DSD activities. The few positive effects of the current CBR situation such as the achievement of value for money, improvement in the quality of DSD activities through collaborative master programmes, and the creation of right frame of mind to freely exchange project information to improve DSD products in legal and cost control terms, could be attributed to the influence of competent DSD actors who worked to reduce errors, achieve lower costs and save time through a fair amount of cooperation in a collaborative less adversarial business relationship.

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