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CONCEPTUAL MODELS FOR ASSESSING ADVERSARIAL BUSINESS RELATIONSHIP AND IMPROVEMENT OF ENGINEERING AND DESIGN SERVICE DELIVERY (EDSD) IN GHANA

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Abstract
Cordial, harmonious business relationship and collaborative business culture that are essential tools for improvement of construction supply chains and networks seem to have eluded Engineering and Design Service Delivery (EDSD) activities despite several years of useful interventions. The aim of this paper was to develop models: to show current EDSD business relationship problems with the view of improving the EDSD activities. The modeling development followed action oriented system theory, system thinking and rethinking. The way of dealing with construction issues in the traditional procurement system in Ghana have been revealed to be adversarial. These offered specific background to demonstrate why the action oriented system theory; system thinking and rethinking were useful in Supply Chain Relationship Management (SCRM) improvement modeling. Further, SCRM improvement modeling is to provide indicative illustration model to overcome the business relationship problems, which have impeded the improvement and continuous improvement of EDSD activities in the past. The desk based search of literature as well helped to develop the models through induction and deduction inferences. These processes were robust attempts pursued based on action oriented system theory, system thinking and rethinking, and relevant literature concepts. Also two separate models for the improvement of the EDSD activities were developed, using performance feedbacks, traditional non adversarial methods/review and innovative information exchange among EDSD practitioners and between them and contractors. One model produced three-stage improvement approach and the other comprising five maturity categorization regions for determination of nine levels of EDSD improvement assessment and continuous improvement in current procurement practice in Ghana.

Keywords: Engineering and design service delivery, Relationship improvement, Supply chain relationship management, Action oriented/System theory/thinking/rethinking,

INTRODUCTION

In a global perspective, evidence of cordial, harmonious construction business relationship and collaborative business culture as essential tools in business improvement processes are shown in many useful construction interventions. Such interventions include alliancing (Yeung et al., 2007), partnering (Bresnen and Marshall, 2002; Naoum, 2003; Wong and Cheung, 2004; Bresnen, 2007; Alderman and Ivory, 2007; Kadefors et al. 2007) and integration of teams (Baiden et al., 2006); which were meant to strengthen, sharpen and shape the tools of collaborative business culture in the time past. These were also to achieve cordial, harmonious business relationship in collaborative culture. Besides, such cordial, harmonious business relationship discourages harsh or adversarial relationship driven by discords, disputes and conflicts (DDC) through preventive or reductive procedures (Orgen et al., 2011; 2012a). These intervention procedures have forged many collaborative, non adversarial and harmonious business processes in most developed and some developing construction industries in the world. However, Engineering Design Service Delivery (EDSD) in developing countries like Ghana keep on working in non collaborative, harsh and adversarial business relationship conditions (Anvuur and Kumaraswamy , 2006; Laryea, 2010; Orgen et al., 2011). Despite all efforts in the past towards achievement of cordial, harmonious business relationship, collaborative business and non adversarial business culture still eludes the EDSD actors. Thus preventing business relationship improvement as an effective and efficient tools, which employ critical relationship improvement factors such as trust (Kadefors, 2004; Meng, 2010), alignment of objectives, problem solving, communication (Meng, 2010) to improve the EDSD activities. Non collaborative working and adversarial business relationship culture cause construction procurement routes and processes to suffer from poor working practices and experiences (Laryea, 2010; Orgen et al., 2012a, 2012b).These then block useful performance feedbacks, traditional non adversarial methods/review and innovative information for the improvement of the EDSD activities (Orgen et al., 2012a). Also the denial of vital information causes EDSD actors on the supply chain of information flow (SCIf) to experience difficulties in communication paving ways for harsh and non collaborative business relationship. It then makes long-term improvement and continuous improvement of EDSD activities extremely difficult leading to delay, poor quality

projects, increase cost, and waste in the construction project delivery (Liiker and Choi, 2006; Orgen et al., 2011; 2012a).

JCPMI Vol. 3 (1): 480 - 497, 2013

Based on these insights, there is a quest for a robust improvement in collaborative business relationship culture for the improvement of EDSD activities. For that matter, the sole purpose pursued in this construction transformational is seeking to achieve quality, diversity, assessable improvement and continuous improvement in Engineering Design Service Delivery (EDSD) activities as projected through the study (Orgen et al., 2011; 2012a; 2012b). Therefore, the paper was organized to consider first, literature review on the current attitudinal behavioural culture of the EDSD actors that makes improvement of the EDSD extremely difficult. This was followed by theories and concepts that are used in the modeling of an improvement assessment model for the EDSD activities Also, a discussion of a 3-stage improvement model for the improvement of EDSD activities followed before the conclusion was presented.

BRIEF OVERVIEW OF THE CULTURAL AND PROCUREMENT IDENTITY

Construction industries in both developed and developing economies suffer from fragmentation, mistrust, more self-interested, unhealthy competitive behaviour and adversarial business relationship culture. (Bresnen and Marshall, 2002; Pryke, 2009; Orgen et al., 2011, 2012a). These situation of discords, disputes and conflicts (DDC) in construction culture greatly contribute to poor project performance (Bresnen and Marshall, 2002; Naoum, 2003; Baiden et al. 2006; Bresnen, 2007; Pryke, 2009; Orgen et al., 2011, 2012a). Ghanaian construction industrial situation is not in anyway different. In some cases the construction business situation is worse, harsh, adversarial and exacerbated by unstable inflation trends coupled with budgetary deficits (Anvuur and Kumaraswamy, 2006; Laryea, 2010; Orgen et al. 2011). These unfavourable situations make construction businesses, especially indigenous firms or companies; find it extremely difficult in being creditworthy to clients and financial institutions (Laryea, 2010). This have not only contributed to lost of both local and foreign contracts, but also have affected immensely the local expertise and EDSD ability to develop a united collaborative working front for large construction ventures. Obviously there is lack of proper collaborative business relationship front or forum to champion exchange of free flow of performance feedbacks, traditional non adversarial methods/review and innovative

information for the improvement of the EDSD activities for large scale business performance (Orgen et al., 2011, 2012a).

The non collaborative and adversarial cultural burden is shouldered by two identifiable contracting groups: the registered and unregistered contractors. The registered contractors are duly registered by the Ministry of Water Resources, Works and Housing (MWRWH) and with Registrar General's Department under Act 179 (1963) of the companies' registration code (Amoah et al., 2011). According to Amoah et al. (2011), the classification of the contractors depend on a number of issues such as plant and equipment holding, financial standing, previous performance and technical expertise. Using this information as a guide MWRWH have categorized Ghanaian construction works under letter D and K for general building works and civil works respectively. In this respect, MWRWH have subdivided the contractors into four categories D1, D2, D3, D4 for building contractors and K1, K2, K3, K4 for civil works contractors. Out of these groupings have emerged large scale (big firms) contractors in class D1/D2 and K1/K2 and also small scale (small firms) contractors with class D3/D4 and K3/K4 currently representing over 95% of contractors operating in the country (Amoah et al., 2011). The unregistered contractors are the groups/types of contractors who do not have their name in the Ministry's classification register and cannot tender for government contracts.

The procurement method commonly used for all government funded contracts in Ghana is the traditional procurement, which seems to be very popular with both public and private clients, consultants and contractors in the Ghanaian construction industry. Traditional procurement system led by Project Manager is recently introduced by the government through the Public Procurement Authority (PPA) (Ahadzie et. al., 2012) and it is intended to reform old age harsh and adversarial procurement system (Anvuur and Kumaraswamy, 2006; Laryea, 2010; Orgen et al., 2011, 2012), which has been in use. In the later method the lead consultant is supposed to be Project Manager (PM) who has acquired project management skills and have capacity to manage projects. The PM has not been empowered enough to control and improve project performance. Also, throughout the procurement processes the critical

business relationship improvement factors such trust, communication, alignment of objectives; problem solving and others are not vigorously pursued.

MULTI-THEORY DEVELOPMENT

Action oriented system theory, system thinking and rethinking are the combined theories used as a path that guides theorizing, explanations, discussions and spell the end of the research in developing the two models and associated discussions in this paper (Seymour et al, 1997; Harriss, 1998; Jugdev, 2004). The supply chain relationship management captured the inputs of critical relationship improvement factors ie trust (Kadefors, 2004; Meng, 2010). These indicative illustration models with the critical business relationship improvement factors are to improve construction works procurement by overcoming the adversarial business relationship problems. Such problems results in discords, disputes and conflicts (DDC) encountered on the supply chain of information flow (SCIf) in the EDSD activities (Anvuur and Kumaraswamy, 2006; Laryea, 2010; Orgen et al. 2011; 2012a; 2012b). The business relationship improvement modeling is hinged on integrated supply chain relationship management (SCRM). The focus is specifically to overcome DDC in the common works procurements in Ghana, and to improve EDSD activities of traditional method and the current project manager led traditional method with project manager as lead consultant as introduced in the Public Procurement Act, 2003 (Act 663).

THEORY OF ACTION (TA)

Relevant aspect of the Theory of Action (TA) required in this paper includes the efforts of Tuomela (1991); Seebass, (2008) and Coleman and Ostrom (2009), indicating that TA is intention driven. This consist of both < I-intention of an action, weaker than the other, we-intention > which 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 EDSD improvement or to improve EDSD activities by making SCIf efficient and effective are concerned with act-relational intentions produce full blown stronger 'We-sense' (shared intention for increase benefits of win-win-win situation). For the EDSD activities involving all EDSD actors is by far stronger (due to aggregate active power of the group) than the I- intention producing weaker 'I-sense' involving a single person ie an architect's or QS sub-SCIf product like design or bill of quantities for EDSD activity.

SYSTEM THEORY (ST)

Another theory useful for the theorization is the System Theory (ST) which is an interdisciplinary theory about every system in nature, in society and in many scientific domains as well as a framework with 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 with perceived boundary around it in order to distinguish internal and external elements such as clients, sub-contractors and construction supplies activities outside the EDSD entities Mele, et al., 2010;Ng, Maull and Yip, 2009. 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 analyzes a phenomenon seen as a whole ie EDSD activity and not as simply the sum of elementary parts; like the individual professional SCIf works (DDC sub-SCIfs) or separate works of project manager, architect, quantity surveyor, structural engineer, services engineer and contractor' works from his outfit. For that matter, depending on this latest definition the focus of the ST will be on the EDSD activity's interactions, business relationships between the EDSD parts or works of individual professions constituting the SCIf (sub-SCIfs) works.

CLOSED/OPENED SYSTEMS AND SYSTEM THINKING/RETHINKING

A system is collection of interrelated parts which form some whole (Cole and Kelly, 2011). A closed system is that which does not interact with its environment the supra-systems and the sub-systems (Cole and Kelly, 2011) A system can be closed or opened. If a system is closed that no materials enter or leave it, then it implies that there will be no inputs and outputs, (ISN, 2009). A closed system therefore does not interact with its environment the supra-systems and the sub-systems. It is easy to turn from open system to close system but not vice versa (ISN, 2009). This is the basic reasons why the EDSD, models and concepts to change EDSD activities from partially or closed system as it seems evident with DDC sub SCIf call for a series of actions. To change to a more opened or freely opened system seems complicated as shown in model 1. On the other hand, according to Barile (2006, 2008) a system is opened when it allows inflow and outflow of materials to change its compositions

or components. That is the system interacts with supra-systems and sub-systems for actual transformation.

This refer to the study of how actions by a system cause changes in behaviour that are understood by the system itself in terms of feedback, allowing the adaptation of the system to new conditions (Mele, et. al., 2010). Supra-system is better organized as function which influences the system. The EDSD sub-systems are the works of individual professions constituting sub-SCIfs that make up the SCIf works which needs to be directed and managed by the system in order to contribute to SCIf's finality (Mele, et. al., 2010). This draws into the research another important aspect of the ST, which is system thinking contributing to the indicative illustration of EDSD activity modeling for EDSD system's finality. System thinking comes from the shift in attention from the part to the whole (Checkland, 1997; Weinbeng, 2001; Jackson, 2003, cited in Mele, et. al., 2010). It occurs in a way that the integrated and interacting situation of a phenomena reveal properties of single parts as Project Manager (PM), Architect (Arc) Quantity Survoyer (QS), Service Engineer (Ser Eng), Structural/civil Engineer (St Eng) and Geotechnical Engineer (Geo-tech. Eng) (distinctly as 'I's or be in absolute union, which by the activities of system elements ie sub-SCIfs or EDSD actors) work are rationally connected (Mele, et. al., 2010). The core problem of system thinking revolves around causation and reductionism (Pickel, 2007). Moreover, system method of thinking assists companies or firms to become learning organization (Mele, et. al., 2010). In this respect, some aspects of the rethinking system theory (RST) cannot be overlooked. This is in order to constitute a robust multi-theory for the theorization, discussions of EDSD activities and construct models for the assessment of EDSD improvement and improvement of the EDSD activities, grounded in systemic paradigm as systemic thinking called 'systemism'(Pickel, 2007).

RETHINKING SYSTEM THEORY (RST)

The idealist concepts of holism and reductionism are accepted in these new wider thoughts as real and causally efficacious in multi-theory building ((Pickel, 2007). They are taken as integral part of the rethinking process where each system takes all other systems as its environment, an ontological position that allows greater flexibility in the conceptualization of

systems, than that based on the part to whole distinction (Pickel, 2004, 2007). In this regard a system cannot be defined only by the set of elements and their relations to an environment. There is the need for the inclusion of the actual processes that make the system a system, which in the complex real-world is the self-organisation.

JCPMI Vol. 3 (1): 480 - 497, 2013

According to the research of Bunge (2004) 'systemism' is like holism the difference is that it encourage analysis of wholes into their constituents and as a results is never in harmony with intuitionist epistemology inherent in holism. Therefore, the EDSD practitioners and contractor should be treated as the producers of any social whole ie EDSD activities. In this regard, what then is a system? Pickel (2007) defined system as a complex object whose parts or components are held together by bonds of some kind. These bonds are logical in the case of a conceptual system, such as a theory; in concrete systems they are materials such as SCIf documentations for constructing projects.

RESEARCH METHODS

The research methods used were desk based study, an extensive review of relevant literature (Fellows and Liu, 2003). In the research, the descriptive approach where questions which seek to find why performance feedbacks, traditional non adversarial methods/review and innovative information for improvement of the EDSD system are difficult to flow, manage and apply freely among the EDSD actors were asked(Naoum, 2004). The review of the literature covered multi-theories which explained and provided strong conceptual content and basis for the model 1 & 2. These methods also helped reveal the relevance of the integrated supply chain relationship management (SCRM) in the construction of the models in terms of the three information elements and attitudinal behavioural attributes used. The information gathered also helped to indicate and illustrate how EDSD improvement assessment can be carried out using model 1 and how to use model 2 for improvement and continuous improvement of the EDSD system finality. Also the system theory, systemic thinking and rethinking showed how preservation and sustainability of free flow of feedbacks, traditional non-adversarial methods/review and innovative information through business relationship improvement to improve EDSD activities can be achieved.

DISCUSSIONS OF THE MODELING

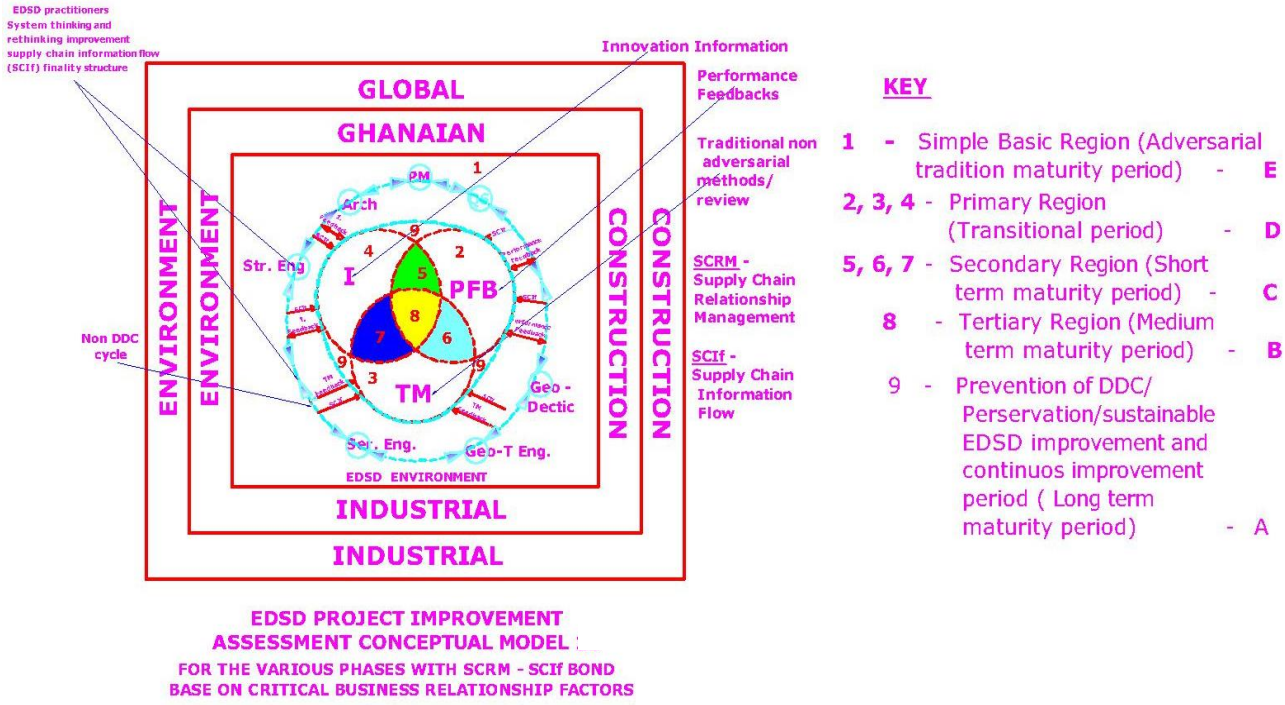
Input and Output processes and procedures for the EDSD improvement assessment model are relevant to determine the extent of EDSD improvement in terms of the information constructs before any action. The strong arguments presented are the conditions or preconditions that demand chain of actions that makes inputs and output in EDSD systems necessary.

JCPMI Vol. 3 (1): 480 - 497, 2013

For instance, it is identified with much evidence that non collaborative working and adversarial business relationship caused by DDC exist among the sub-SCIfs (ie separate products from individual professions of the EDSD entity) and also between them and the contractor's organisation (sub-EDSD actors) as a EDSD sub-system. The EDSD activities are taken as a system whole which its improvement is dependent on proper and effective interaction of the sub-SCIfs systems. The degree of permeability of the EDSD system boundaries and the sub-SCIf boundaries are very important for exchange free flow (in and out) of performance feedbacks, traditional non adversarial method/review and innovative information is to make the SCIf whole effective and efficient cycle as in model 1 This proper and effective interaction is possible through the active power of the EDSD actors (comprising sub-SCIfs systems and the contractor as EDSD sub-system) as well as the facilitator's work of promoting and motivating the use of business relationship improvement (BRI) factors. It is on this business relationship improvement (BRI) that sub-SCIfs and the entire EDSD entity dependents to achieve free flow of exchange and sharing of performance feedbacks, traditional non adversarial methods/review and innovative information shown in model 1 This kind of information exchange and sharing is to make SCIf on which the EDSD activities depend effective and efficient for the improvement of EDSD activities as a system whole shown in model 1 and in the 3- stage conceptual model 2. Therefore, the key issues for the modeling of EDSD entity as a system whole are the need to draw or have inputs from the environment. This is in effect to take all other systems and sub-systems for instance clients, sub-contractors, supplies, other contractors, and other EDSD actors in the Global and Ghanaian environments and draw from to make up the sub-SCIfs, by so doing constitute an effective and efficient SCIf shown in model 1. The SCIf is the bond playing a central role in the mechanism that make the EDSD entity work as a system (Pickel, 2007). Therefore, improving SCIf through the active power of the EDSD actors in promoting and motivating the use of critical (BRI) factors by the facilitator is essential in full blown achievement of a joint goal of the EDSD system. The focus of this theorization is to achieve a finality of

improvement in the EDSD activities open system as developed in indicative illustration model 1. To improve the EDSD entity, individual practitioners (PM, ARC, QS, St Eng., Ser Eng., Geo-tech.) thinking should be a paradigm shift from parts such as sub-SCIfs products of professions towards interactions that assist the system whole finality.

In this sense, the parts (sub-SCIfs) are to be composed through interaction into system whole of SCIf cycle as shown in the model 1. It is essential that all the EDSD actors in the model 1 contribute to achieve effective and efficient bond which is formed through proper interaction and exchange of information.



Model 1

Therefore, in the EDSD assessment conceptual model 1 the supra systems and sub-systems in the Global and Ghanaian construction environment are rationally and strongly connected to the EDSD system and should be in single union of non DDC cycle of SCIf bond. System rethinking expresses that exchanging and sharing of SCIf cycle information by the EDSD practitioners with contractor is a bond playing a central role in a mechanism that makes EDSD system a system (Pickel, 2007). Mechanisms central processes in realizing the

systems, so projecting the processes as 'systemism' in system rethinking should vigorously be pursued. The functioning of the processes in rethinking is dependent on the following: SCIf bond as in model 1 big circle.

EDSD component ie are the EDSD practitioners on the circle and contractor/its organization that can be mobile depending on his situation, EDSD structure the architecture ie the autonomous sub-SCIfs (EDSD actors) with the lead EDSD practitioner as procurement head, and EDSD environments ie Global and Ghanaian environment indicated in model 1. The SCIf bond is the mechanism that works the system, EDSD structure, EDSD component and EDSD environment. Action in the EDSD system should work as processes of a mechanism of a system whole of EDSD practitioners and contractor in hybrid procurement system to improve EDSD activities as in the 3- stage conceptual model 2. Then there will be no more room for reductionism of parts such as DDC sub-SCIfs to cause professional, non collaborative working and adversarial attitudinal behaviours.

MODEL 1 EDSD IMPROVEMENT ASSESSMENT MODEL

The EDSD improvement assessment model consists of five regions: simple base (baseline), primary, secondary, tertiary and improvement and continuous improvement regions. The simple base region is traditionally non collaborative, harsh and adversarial in nature, has one level (level1) where there is little or no exchange or sharing of performance feedbacks, traditional non adversarial methods/review and innovative information to improve SCIf and EDSD system whole as in model 1. Also, model 1 has eight other levels within the remaining four regions. These can be used alongside the level 1 in the simple base region (traditional adversarial period) to determine in terms of exchange or sharing of performance feedbacks, traditional non adversarial methods/review and innovative information where a particular construction company or firm will be placed. The EDSD practitioners' ability in terms of exchange or sharing information elements eg, Performance feedbacks will also be determined. It will then offer useful premises to investigate and assess why there is/are improvement or no improvement based on the flow of information from SCIf cycle of EDSD practitioners to contractor/organization and vice versa. Besides, based on the following facts of the model 2 construction firms or companies can in field survey be

assessed of the level of improvement conducted based on the performance feedbacks, traditional non adversarial method/review and innovative information used.

Indeed, model 1 offer indicative illustrative assessment dimension prior to the usage of 3-stage EDSD improvement conceptual model 2 Further, primary region (transitional period) of three open subsystems levels 2, 3, 4, each offers one piece of improvement information only. The secondary region (short-term period) also of three open subsystems levels 5, 6, 7, each offers two pieces of improvement information only. Furthermore, model 1 presents a tertiary region (medium-term period) of only one open subsystem level 8, which offers three pieces of improvement information only. Finally, improvement and continuous improvement region (long-term period) embraces all the open subsystems of the primary, secondary and tertiary as level 9, contribute to the system whole finality. This is exclusively essential for the preservation, stability and substance of improvement and continuous improvement in the long-term and prevention DDC through effective used of the critical business relationship improvement factors. In each of these nine levels there is at least an exchange and share of one of the following information: performance feedbacks, traditional non adversarial methods/review and innovative information from bond SCIf cycle of the mechanisms which make the system a system. The effectiveness and efficiency of the SCIf cycle is based on the voluntary relinquishment of some autonomy for a hybrid procurement through business relationship improvement to achieve proper and effective EDSD actors' interaction and exchange of information to the improve EDSD system whole finality.

Stage 1 Improvement in Business Relationship and Information Generation

The stage 1 of the EDSD improvement conceptual model is constructed with a focus on business relationship improvement (BRI) for the generation of information. The preconditions or conditions that necessitated this chain of actions are that in the EDSD system whole, under the traditional or recent PM led traditional procurement method the EDSD practitioners (sub-EDSD actors) and contractor (sub-EDSD actors) have autonomy to practise their professions. However, people dislike being controlled and thus engage in conflict to avoid being controlled as it is with EDSD actors Collins, 1975; Orgen et al,

2012a). Each consulting EDSD practitioner wishes to keep his autonomy and monopoly of his profession. These conditions encourage DDC among EDSD actors where artificial closed system of sub-SCIfs with DDC is produced giving rise to the non collaborative and adversarial business relationship syndrome.

Also the EDSD practitioners' autonomy in producing sub-SCIfs seems to have strong linkage with the procurement method used. For that matter, the encouragement of BRI call for a hybrid procurement method which will allow or encourage BRI to flourish properly among EDSD actors to voluntarily relinquish some of their autonomy and monopoly for the useful development of BRI based on critical relationship improvement factors ie trust, problem solving, alignment of objective and others as in model 2. Also there will be proper flourishing of BRI which will foster promotion and motivation of the active power of EDSD actors to plan and achieve a full blown joint business goal coupled with We-intentions for the success of the EDSD system whole. Further the facilitators workshops, for a, seminars and meetings through brainstorming will produce proper interaction and free flow of performance feedbacks, traditional non adversarial and innovative information. This information then will flow to the information processing stage 2 developing towards an open system of thinking and rethinking as in the conceptual model 2 to achieve effective and efficient SCIf bond to improve EDSD system whole finality.

Stage 2- Information Processing and Distribution of the conceptual model

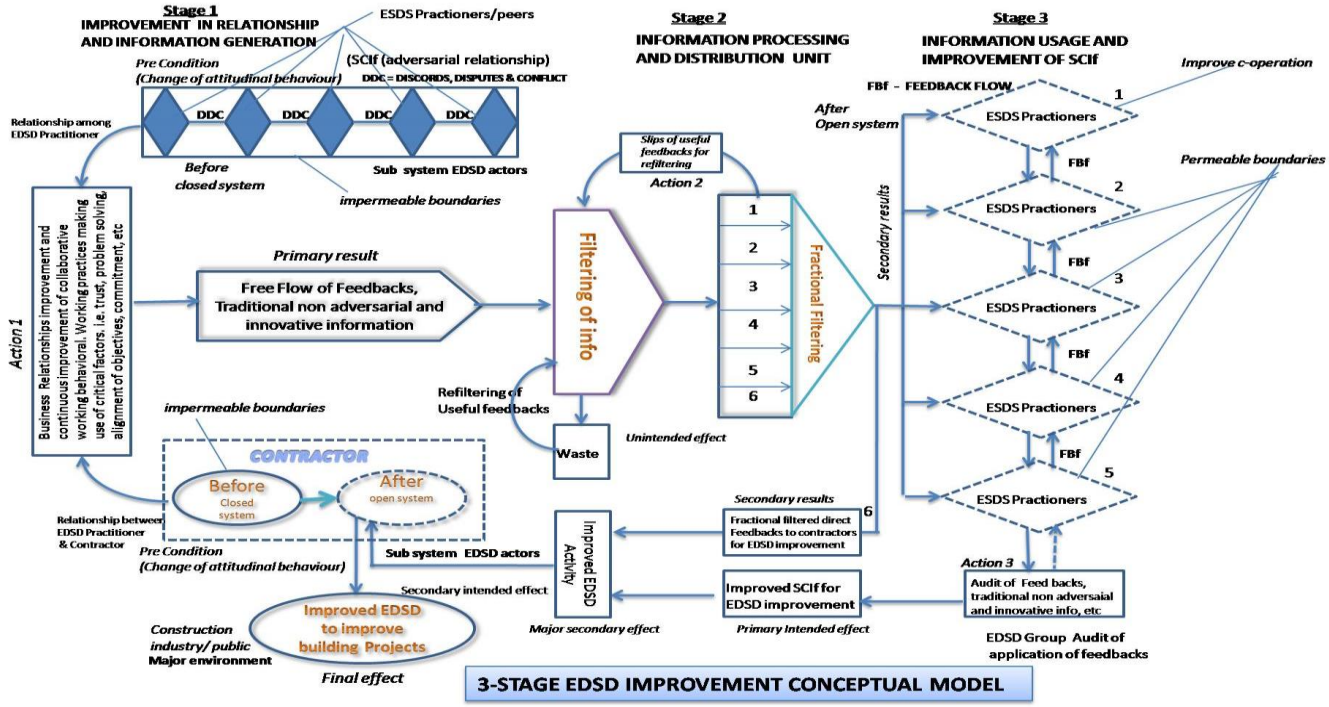
The stage 2 of the conceptual model 2 is developed for information processing and distribution, which greatly involve the EDSD mechanism and processes in which the SCIf bond works to make EDSD system a system. The improvement of the EDSD systemic (systemism), demands that the information processing should involve all information from all systems and sub-systems within the EDSD entity and those that form the external global and Ghanaian environments as indicated in model 2 for filtration and fractional filtering before distribution. Proper filtration will sieve and deal with all element and issues that will prevent full development of the supply chain relationship management such as; DDC prone issues, non critical business relationship factors and general elements or issues which fans non collaborative and adversarial relationship which block improvement of the EDSD system.

These filtration and fractional filtration will make use of the feedback sheets for optimum success (Orgen et al, 2012a).. Details of fractional filtration concerning grouping of information into two categories should be; inline with respective professions.

JCPMI Vol. 3 (1): 480 - 497, 2013

The type of information i.e. performance feedbacks, traditional non adversarial method/review and innovative, which are based on the EDSD structure and components numbering in stage 2 and recycling of information which seems irrelevant during processing or difficult to interpret or group or classify as waste. Indeed such wastage need special reasoning, experience and tactfulness through thinking and rethinking of the processes to make boundaries of the sub-SCIf and SCIf permeable systems to allow re-filtration of managing the waste to obtained maximum effective and efficient use of the interaction and information flow before application or absorption.

Three-stage EDSD Improvement Model



Model 2

Stage 3:- Improvement of SCIf for the Improvement of EDSD system

For the construction of the final stage of the 3-stage conceptual model, the finality of model is based on action oriented system theory, thinking and rethinking which drew its developmental strength from EDSD We-intention, We-goal or joint goal.

Besides it involves opened system of permeable boundaries of EDSD practitioners and contractor's/organisation contributing to an effective and efficient SCIf in processes of the mechanism, structure, components and environments in which SCIf develops into required finality. The results of an effective and efficient SCIf optimum or finality level comes through proper interaction, effective exchange and free sharing of fractionally filtered performance feedbacks, traditional non adversarial and innovative information abstracted from EDSD feedbacks sheets. This information are applied and absorbed in two separate channels, direct to the contractor after fractional filtration and through the SCIf after absorption of the applied information and auditing. Also the application and adoption of the information arise on the basis that a hybrid procurement approach, with full application of relationship management concepts should be encouraged with optimum relaxation of EDSD actors' professional autonomy. It is in the light of these issues that the improvement of EDSD entity activities will directly improve EDSD projects. It should further be noted that the improvement of the EDSD will effectively occur after a controlled EDSD actors' audit of the total quality output of the systemic (systemism) information used in the development of the SCIf as in model 2. On the basis of this multi-theory reasoning the EDSD improvement are bound to succeed and thrive.

CONCLUSION

It is evidence that non collaborative working and harsh or adversarial issues exist among the EDSD actors (EDSD practitioners and contractor/organization). These situations hamper business relationship improvement among EDSD actors and affect the effective and efficient performance of the Traditional procurement system led by Project Managers. Business relationship improvement (BRI) will be proper and effective among EDSD actors through exchange and share of performance feedbacks, traditional non adversarial methods review and innovative information. The BRI is partly dependent on voluntary relinquishing of some professional autonomy of EDSD actors to adopt free exchange and share of performance

feedbacks, traditional non adversarial methods review and innovative information to make SCIf effective and efficient for the improvement of the EDSD activities. It is the proper development of these BRI issues that will break and prevent continuous occurrence of business failure and overturn all justification for DDC sub-SCIf (sub or fragmented documentations).

EDSD entity finality obviously lacks continuous integrated supply chain relationship management of business relationship to develop strong, effective and efficient SCIf bond to cause any systemic (systemism) function to occur. The multi-theories of action oriented system theory, thinking and rethinking offer tools that have proved effective in the construction of relationship of direct and inverse proportions. These conditions led to development of EDSD improvement assessment model 1, which could be used to find the improvement status of construction organisations. The improvement status based on the three information elements: feedbacks, traditional non adversarial methods/review and innovative information by adopting the 3-stage improvement conceptual model 2 for their improvement could be applied effectively for continuous improvement of the EDSD system. Then if model 2 is properly used, it will yield cohesiveness of indigenous EDSD and contracting works for project success. Indeed, there is an urgent need to develop business relationship improvement in a hybrid procurement system for Ghana.

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