Understanding the Impact of a Facilitator's Behaviour on a GDSS Meeting Outcomes: The Formulation of the TAGDSSM Model

Amer Al shishany and Jackson Adams

Abstract— This paper aims to shed some light on the importance of the facilitator in a GDSS (Group Decision Support System) supported meeting and the role he/she plays in managing these systems and consequently the impact of his/her managing behaviour on the outcomes of a GDSS meeting.

Based on a field study interviewing people from real GDSS environment, SIDE's (Social Identity model of Deindividuation Effects) strategic component assumption and relevant GDSS supported meeting's literature this paper proposes a new model named 'Task-Conflict and Anonymity-Enabled GDSS Meeting (TAGDSSM). This proposed model aims to enhance the understanding and interpreting of facilitators' and users' behaviour in anonymity-enabled GDSS meeting environment. The TAGDSSM model manifests two major constructs impacting user's behaviour in the decision making process: GDSS system's anonymity and facilitator's behaviour within GDSS meetings.

In-depth semi-structured interviews were conducted with experienced GDSS meeting facilitators, technical support experts, users and managers of GDSS meeting application providers. All interviewees were from real GDSS meeting settings who had interacted with the system in a real and non-simulated organizational environment. Three world leading GDSS anonymity-enabled meeting applications were investigated in this research: 'MeetingSphere', 'FacilitatePro' and 'Spilter'. The new proposed model ATGDSSM is worthy of examination as it helps in explaining the interplay among users and anonymously generated contributions in a GDSS meeting and how it may drive users' efforts and meeting outcomes.

Keywords— Group Decision Support Systems; TAGDSSM Model; Task-conflict; Technical Anonymity; Strategic Component of the SIDE Theory.

I. Introduction

Although the GDSS meeting application plays a significant role in helping the process of decision-making, a GDSS system by itself does not address meeting issues such as the meeting design or verbal communication management. A facilitator in a GDSS supported meeting is a definite requirement and represents one of the major parties comprising the GDSS meeting environment despite the financial cost he or she may represent (Bostrorm *et al*., 1993).

Amer Al shishany
University of Essex
U.K

Jackson Adams
University of Essex
U.K

The role of the GDSS meeting facilitators is more complex than a traditional facilitator. The core tasks assigned to the facilitator are to design GDSS meeting sessions, manage and run these sessions making optimal usage of the available facilities and techniques within the meeting facility and produce the session report as required (Jones *et al*., 2008). The major duties of a GDSS meeting facilitator are summarized in three major tasks: GDSS pre-session preparations; managing the GDSS session; and issuing of the GDSS final report. The role that the facilitator plays should be acknowledged in fulfilling these duties (Ready *et al*., 2004). These issues are the core responsibilities of a GDSS meeting facilitator. A combination of both the GDSS meeting application and an effective facilitation can elicit the required results from such a meeting (Adla *et al*., 2011).

However, even though these technologies can foster collaborative teamwork, this sought after collaboration is not guaranteed due to the human factor, facilitator and other users, in this communication process. Unfortunately, not all users are willing to work collaboratively to make these applications succeed in their endeavours (Poole, 2009). Sometimes, users of such systems do not accept the constraints of these technologies. Instead, users try to modify and adapt or exploit the available technology to suit their own needs and achieve personal objectives (McGrath and Hollingshead, 1994 cited in Daniel, 2007) by working around these systems (Pollock, 2005, cited in Johnson and Wetmore, 2009).

II. Motivation for the Research

One of the difficulties that IT scholars are facing to overcome the biases or dysfunctions in humans decision-making is, as stated by DeSanctis *et al*., (2008:553), the "inadequacy of existing theory to predict or explain technology effects", and that fresh technology theoretical perspective is needed to better understand the processes of technology implementation (DeSanctis *et al*., 2008).

Moreover, despite the fact that one of the most important and effective characteristics of a communication formula in a GDSS anonymous meeting sessions is the 'Facilitator' of these sessions, the role of the facilitator in GDSS meetings has received very scant interest in the literature pertaining to the GDSS field of knowledge (Adla *et al*., 2011; Niederman and Volkema, 1999, Bostrorm *et al*., 1993). Consequently, this paper is dedicated to the discussion and illustration of the findings regarding the role that a facilitator plays in effecting the communication process in these GDSS sessions. The facilitator's importance is revealed in his/her role of improving the performance of the meeting participants (Ready *et al*., 2004) and influencing the outcomes of a GDSS meeting.

It is vital to understand how GDSS users behave in an anonymous environment where identities are masked and

contributions are untraceable and how those users utilize these systems. Therefore, many scholars have presented different theories trying to explain and understand how small groups operate and behave in an anonymous environment (Pool *et al.,* 2004). From a social motive's perspective the members of a small group can either focus predominantly on the outcomes and interest of the group as a whole or they may focus on their own interests. These social motives are said to have a critical influence on the way in which conflict in groups are managed (De Dreu *et al., 2000*) where efficient conflict management requires a better understanding of the factors that may increase conflict within group meetings (Al shishany and Adams, 2013a; Mooney *et al.*, 2007) and should therefore not be eliminated but properly handled (Costantino & Merchant, 1996). This kind of conflict occurs when group members discuss and debate different points of view related to the task, such as organizational hiring strategies (Mooney *et al.*, 2007; Jehn *et al.*, 2008), goals and the best choice of action (Hobman *et al.*, 2002).

However, the SIDE theory is one of the many theories that have attempted to explain how group members behave in an anonymous environment. Arguably, it is most current and influential theory in terms of anonymity and group members' interpersonal interaction (Christopherson, 2007). In drawing on this theory, this paper is proposing a new model to explain the behaviour of GDSS users in an anonymous situation. This proposed conceptual model is called the Task-Conflict and Anonymity-Enabled GDSS Meeting (TAGDSSM), and it can be used to enhance the understanding of task-conflict and the user's behaviour in anonymity-enabled GDSS meetings.

The TAGDSSM model was developed from: firstly, the relevant literature of anonymity in GDSS supported meetings. Secondly, interviews conducted with GDSS experienced meeting facilitators, technical support experts, users and managers of GDSS application providers. All interviewees were from real GDSS meeting settings who had interacted with the system in a real and non-simulated organizational environment. The interviews provided valuable information that helped in understanding the interactions of GDSS system users with each other and with the system itself, and also helped in providing an important new and different perspective in certain aspects from the current literature on users' behaviour, including the facilitators, in an anonymous GDSS meeting environment. The previously mentioned directives helped in formulating and proposing the TAGDSSM model that tries to contribute to accumulated effort in explaining the behaviour of an anonymity-enabled GDSS meeting user. The following sections illustrate the model and its constructs.

III. *Theoretical Framework: Formulation of the TAGDSSM Model*

In designing the conceptual framework, the TAGDSSM model (see Fig. 1.) proposes that three constructs play a significant role in determining the user's behaviour in a GDSS meeting system: Anonymity of GDSS, Technical Anonymity

and Facilitator's Behaviour. These three constructs, in turn, impact on a 'User's Behaviour' within a GDSS meeting and a 'User's Confidence' in the reliability, confidentiality and ability of a GDSS meeting system in maintaining the anonymity of the user's identity. According to the TAGDSSM model the expected outcome behaviour from the user's interaction with the anonymity-enabled GDSS meeting system is that it may generate two types of behaviour: First, according to the filed study of this research and according to the strategic component of the SIDE theory (Spears and Lea, 1994), users may attempt to work around the system by trying to achieve personal objectives, and/or try to attribute anonymous comments to their original authors (Hayne *et al*., 2003; Nunamaker *et al*., 1997). Second, users may work towards achieving planned meeting objectives through generating and enhancing task-conflict. Each of these constructs and outcomes are explained and justified within the next sections.
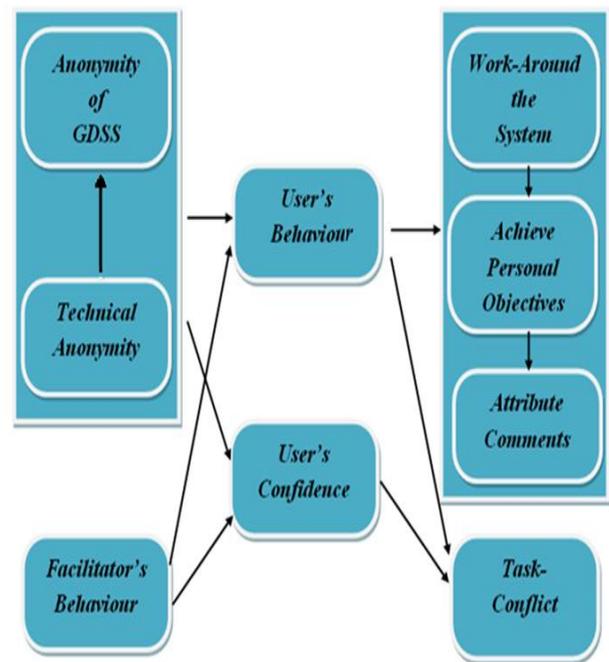

Fig. 1. Proposed 'Task-Conflict and Anonymity-Enabled GDSS meeting (TAGDSSM)' model.

A. *Constructs of the TAGDSSM Model*

Anonymity of GDSS refers to the whole GDSS anonymity which involves the procedures a meeting centre, usually called an 'iLab' or an 'Innovation Space', follows to maintain the anonymity of users' identities. For example, users of the meeting application login to the system as 'anonymous users' without being required to enter any personal emails or details. Moreover, users not being allocated certain tables or computer terminals to use during the meeting and being encouraged to swap places after meeting breaks. These blended actions or procedures secure anonymous interactions in a GDSS meeting and increase users' confidence of the GDSS systems confidentiality and anonymity.

Technical Anonymity is a part of the whole GDSS anonymity and refers to the removal of a participant's name or any related technical identification information that may uncover the author's identity in an electronic material exchange (Christopherson, 2007). Gavish and Gerdes (1998) referred to this technical anonymity as 'Procedural Anonymity' which deals with the technical aspect of ensuring the anonymity of communication among participants using special network protocols to hide the source's identity (for more about this subject see AETs (Anonymity Enhancing Technologies) in GDSS Supported Meetings (Al shishany and Adams, 2013b)).

Facilitator's Behaviour refers to the actions and procedures taken by the facilitator of a GDSS session to secure and confirm the meeting's anonymity and ensure reporting genuine brainstormed ideas and agreed decisions among meeting participants. The facilitator's behaviour with regard to the meeting participants and particularly with the person or manager who booked the GDSS meeting service, (some facilitators call this person as the 'Owner of the Session'), may impact on the behaviour of the user and users' confidence in the system's confidentiality and reliability for conveying real meeting outcomes, which consequently may impact users' willingness to contribute to meeting sessions.

B. *Expected Outcomes of the TAGDSSM Model*

The TAGDSSM model proposes that two constructs, the anonymity of GDSS and the technical anonymity, impact two aspects: the user's behaviour and the user's confidence. The user's behaviour is affected by the anonymity within the 'iLab' or an 'Innovation Centre' and the anonymity a GDSS application provides technically. Users' belief in the anonymity of the system is expected to increase their confidence that their comments and contributions are untraceable. This situation drives the meeting towards offering more constructive arguments and divergent points of view, disagreement among different management levels and concentrate on the task and objectives of the meeting itself, leading to increased task-conflict among the system users.

However, the model proposes that users of a GDSS meeting system may try to work around the system and, according to the strategic component of the SIDE theory; users of a CMC (Computer Mediated Communication) medium exploit their hidden identities to achieve their own personal objectives rather than concentrating on achieving the meeting's original objectives (Spears and Lea, 1994). It is also expected that users may work on attributing comments trying to figure out who said what. Therefore, the model also, in consistence with Hayne *et al*., (2003) and Nunamaker *et al*., (1997), proposes that users try to attribute comments to their original authors. The enabled anonymity in GDSS systems is also designed to prevent the attempts of attributing comments and contributions through GDSS 'system's anonymity' and the 'technical anonymity' associated with the GDSS meeting application. Therefore, the anonymity in the GDSS system impacts on a user's behaviour either by encouraging him to increase task-conflict or by giving him the chance to exploit the anonymity feature to achieve personal objectives.

The third construct, the facilitator's behaviour, also impacts on a user's behaviour through increasing his confidence in the anonymity of the system and ensuring that all interactions conducted in a GDSS session are untraceable. This facilitator's behaviour could increase the task-conflict in the GDSS meeting. According to field study interviews of this research it was found that some facilitators may be acting in a way where he/she coordinates with the 'Owner of the Session' to generate what the 'Owner of the Session' believes as appropriate. This may occur after the meeting participants generate a number of ideas and propose different alternatives or solutions of a specific issue. Both the 'Owner of the Session' and the facilitator of a meeting may meet separately from the rest of the group members and decide which of the generated ideas or alternatives could be suitable for further discussion by the group members at the next round of discussions and eventually the possibility of voting on these alternatives. This planned situation produces pre-determined decisions or outcomes that the meeting members did not generate or agree upon. In this research this situation has been referred to as 'predetermined outcomes or decisions of a GDSS meeting'.

The facilitator's behaviour is important to the outcomes of a GDSS meeting. The facilitator's action of coordinating with the 'Owner of the Session' allowing him to choose certain ideas from the ones proposed by meeting group members produces a situation where the outcomes of a GDSS meeting are controlled and determined by only one person. Similarly, if the 'Owner of the Session' is allowed by the facilitator to forward his own personal suggestions to the rest of the group members to discuss them, the situation becomes a controlled rather than a free engagement. Allowing this situation to occur contradicts the basics of holding an anonymous GDSS meeting which should be based on meeting participants' free and genuine outcomes.

On the other hand the behaviour of a facilitator will also impact on the outcome of a GDSS meeting when the facilitator confirms to the session owner (the manager) from the start of the hiring process that the GDSS meeting outcomes will purely reflect what the meeting participants will generate and have agreed on. In this case, the facilitator's behaviour in not allowing the manager to control the meeting outcomes will impact the user's confidence of the validity and value of GDSS anonymous meetings. Moreover, the facilitator's behaviour plays a major role in preventing other meeting participants from exploiting their masked identities in achieving personal objectives and directing all meeting efforts towards the fulfillment of the meeting agenda.

IV. Research Method

Semi-structured interviews with open questions were designed for this study because it provides freedom in following up view points, as necessary, which may encourage both the researcher and the interviewee to participate more

actively by adding follow up questions, comments or gestures and uttering them in their own words (Packer, 2011).

Three world leading GDSS anonymity-enabled meeting applications were investigated in this research: 'MeetingSphere', 'FacilitatePro' and 'Spilter'. Twenty one people were interviewed using in-depth semi-structured interviews. Each interview discussed approximately thirty open-ended questions and lasted approximately one hour.

There were four categories of interviewees from four different countries: U.K, Netherlands, Romania and Turkey: The first category was users of the GDSS application, either the 'MeetingSphere' or the 'FacilitatePro' software. These users were from different business and government sectors that had used these applications more than once in their departmental meetings. The second category was experienced facilitators in maintaining and facilitating GDSS sessions and who had managed GDSS sessions for at least two years in different departments from both business and government sectors. The third category was the GDSS system technical support experts who maintained technical support for these applications. The fourth and final category was managers of GDSS application retailers. All interviewees were from real GDSS meeting settings who had interacted with the system in a non-simulated and real organizational environment.

Interview questions were formed and adapted to discuss issues relevant to the specific position or role of the interviewee. Users' questions investigated issues relating to the usage of the software and participants' interactions among themselves in an anonymous GDSS environment, and their interactions and perception of the anonymity feature itself. The facilitators' questions investigated issues relevant to their behaviour and experience in facilitating GDSS sessions and observing participants' behaviour during these sessions. The technical support experts' questions were more related to the technical issues of the software itself, such as the data encryption and data transfer protocols, and also their experience in managing these GDSS sessions. Finally, the managers' questions were more related to their general experience retailing GDSS systems. A comprehensive image encompassing the most important three components of a GDSS meeting, the users, the facilitators and the technical support individuals, was constructed from interviewing those four categories.

v. **Discussion and Conclusion**

The major duties of a GDSS meeting facilitator are summarized in three major tasks: GDSS pre-session preparations; managing the GDSS session; and issuing of the GDSS final report. With regard to the GDSS session management, findings of this research indicated that there are three important duties a facilitator is required to accomplish within the meeting sessions, these duties are confirming the GDSS system's anonymity, keeping meeting participants focused and encouraging meeting participants to remain involved in the meeting's activities.

The issue of meeting participants feeling insecure about their anonymously generated contributions remaining anonymous may impact on their willingness to reveal all their brain storming or disagreeing with others. Therefore, the facilitator's role operates to ensuring the GDSS system's anonymity and confidentiality to all meeting participants. The facilitator plays this important role to ensure members' cooperation and contribution to the session. One of the facilitators indicated:

What we try to do is to maintain the integrity of anonymity, and we also emphasize the importance of people feeling and believing that they are posting things anonymously, and to be more creative and give better ideas.

A facilitator may enhance the confidence of users in the anonymity of the GDSS system, and consequently manage these sessions to generate agreed outcomes among the meeting participants themselves.

I think from the briefing we got when we first got there it was explained to us, I didn't have any concerns that it wasn't anonymous (A user of the application)

The GDSS application, as the communication medium among meeting members, is an incentive for the strategic resistance within group members (Spears *et al*., 2002a) to the powerful individuals of the group (Postmes and Spears, 2002). These applications allow all meeting members to generate ideas anonymously and participate freely without the fear of criticism (Jessup *et al*., 1990). The anonymity feature provided by the GDSS meeting applications and the behaviour of the facilitator in these meeting sessions enhances Task-Conflict among meeting participants. The facilitator can influence the user's behaviour and direct them towards achieving the meeting's objectives and increasing task-conflict among meeting participants. This kind of behaviour can be reached through preventing meeting participants from working around the GDSS meeting system and exploiting it to achieve personal objectives.

With regard to the TAGDSSM model, this paper proposed a new model for enhancing the understanding of how anonymity in GDSS supported meetings affects users' behaviour and the outcomes of the meeting, and tries to shed light on hidden aspects of the GDSS anonymity-enabled meetings. Moreover, the TAGDSSM model can be used to emphasize the understanding of task-conflict behaviour among meeting participants in anonymity-enabled GDSS meetings.

The suggested model proposes that three major constructs impact the outcome of a GDSS supported meeting. These constructs are: the 'GDSS system's anonymity' and the 'technical anonymity' and the 'facilitator's behaviour'. These constructs impact the users' behaviour in two different ways: either towards exploiting their unidentifiable identities to work around the system and achieve personal objectives, or towards exploiting their hidden identities in improving the outcomes of a meeting through increasing meeting group task-conflict.

However, the significant role a facilitator plays in GDSS meetings preparing and managing the sessions makes it difficult for the meeting participants to exploit hidden identities to achieve personal objectives or work around the system. Therefore, the facilitator's behaviour in a GDSS

meeting is crucial to users' behaviour and the outcomes of the GDSS meeting. Interviewees in most of the interviews conducted for this research emphasized the important role a facilitator plays in managing these sessions:

They might be tempted to do (Take advantage of their hidden identities to achieve personal objectives), but here come the talent of the facilitator. Here it is important to have a well-trained and well-experienced facilitator.

Moreover, the anonymity feature of a GDSS meeting prevents personal conflict among participants because participants are unable to identify each other's identities. Participants are unable to know who typed the comment in the system, therefore, eliminating the possibility of establishing personal conflict among meeting participants. Hence, exploiting anonymity for achieving personal objectives is difficult due to meeting participants' masked identities.

It's very difficult the software to create personal conflicts just because you don't know who has said.

The thing is, if you don't know who said something it's difficult to have personal argument.

In addition to the behaviour of the facilitator within the GDSS meeting sessions, the voting feature that exists in the GDSS application which could be used to vote on decision alternatives also makes it more difficult for meeting participants to reach personal goals rather than achieve the planned goals of a meeting. The voting feature of the software requires that participants should gain the highest percentage of votes for any decision to be advanced.

If someone has a minority view they don't tend to get far with it unless people agree with them, so if someone is out spoken then they have to gain support in order to go anywhere with it, especially with the voting, that's definitely the case.

Hence, exploiting the anonymity provided by the GDSS meeting systems to achieve personal agendas as suggested by the strategic component of the SIDE theory is not possible due to the role of the facilitator, the enabled anonymity within the software and the fact that participants should gain the agreement of others with regard to any required action.

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