

## What Is Effective GSS Facilitation? A Qualitative Inquiry Into Participants' Perceptions

Gert-Jan de Vreede, Jessica Boonstra  
Delft University of Technology  
The Netherlands  
Email: [devreede@tpm.tudelft.nl](mailto:devreede@tpm.tudelft.nl)

Fred Niederman  
Decision Sciences & MIS  
Saint Louis University  
email: [niederfa@slu.edu](mailto:niederfa@slu.edu)

### Abstract

*Facilitation in GSS meetings is considered among the most important critical success factors for effective GSS application. A considerable amount of research on GSS facilitation has been carried out, yet this research has been biased by a facilitator's perspective. In this study, we investigated participants' perceptions of effective GSS facilitation. Based on transcripts of interviews with participants, we produced a comprehensive overview of tasks and behavior that participants felt were crucial for the effective facilitation of GSS meetings. Comparison and contrast with existing facilitation task taxonomies showed that our results complement existing insights and add further detail to it.*

### 1. Introduction

Group Support Systems (GSS) are designed to improve the efficiency and effectiveness of meetings by offering a variety of tools to assist the group in the structuring of activities, generating ideas and improving group communications [6,13]. Various studies suggest that GSS may save 50-90% of person hours and project time when compared to regular meetings [14,15,17]. Yet other studies show that these benefits are not always easily achieved [9,18,19,21]: Poor process design, poor task technology fit, poor facilitation, poorly selected or conflicting participants, or technology break downs may impair well intended GSS efforts. Moreover, most GSS consist of many different tools each of which can be configured in many different ways, making it practically impossible to guarantee successful meeting preparations [2].

It is therefore not surprising that organizational groups frequently look for assistance in managing the use of GSS. This assistance often comes in the form of one or more facilitators that support GSS users in preparing and moderating GSS meetings [12]. A facilitator may diminish the complexity of the system and the time needed for training to be able to use the system [10]. More formally, the facilitation role has been defined as 'a dynamic process that involves managing relationships between people, tasks and

*technology, as well as structuring tasks and contributing to the effective accomplishment of the meeting's outcome' [4].*

Several studies show that the facilitator's way of organizing and moderating a meeting is crucial for the way in which the participants appreciate the meeting and its results see e.g. [1,7]. Also, several authors have distinguished key functions of the facilitator, like "Asking the right questions" or "Listening to, clarifying and integrating information" see e.g. [3,12]. However, the data in these studies has been derived from facilitators themselves and laboratory assessments on the effects of facilitation. Seldom has research on GSS facilitation considered the observations of *real meeting participants themselves*. Yet the participants' perspective on facilitation may provide a key insight in the success of a meeting. This was demonstrated in a field study reported in [20] where statistically significant relationships were found between every satisfaction variable and the participant's evaluation of the facilitator.

This paper reports on a detailed qualitative analysis of participants' feelings and ideas regarding the facilitation of GSS meetings. We used a *phenomenological* approach [5] that allows researchers to study a problem or issue by entering the field of perception of a stakeholder, and looking for the meaning of the stakeholder's experience with the problem or issue, see e.g. [16]. In our case, the phenomenon studied was 'effective GSS facilitation from a participant's perspective'. The research question addressed was "What is essential for the experience during the GSS meeting to be described by a participant as effective or ineffective facilitation activities and/or interventions?" Sub-questions included:

- What do participants consider to be important functions of the facilitator?
- Which facilitator behavior is found to be stimulating or inhibiting for the course of the meeting?
- What are considered to be pleasant or unpleasant characteristics and/or behaviors of facilitators in general?
- Is there an essential structure of an "effective facilitator intervention"? If so, which aspects are part of this phenomenon?

**Table 1. Task and interactional interventions [7].**

| Task interventions  | Interactional interventions  |
|---|--|
| <ul style="list-style-type: none"> <li>• Structures group activities</li> <li>• Guides the agenda</li> <li>• Clarifies and rephrases issues</li> <li>• Keeps discussions on topic</li> <li>• Reformulates questions or problems</li> <li>• Summarizes</li> <li>• Tests agreements among participants</li> <li>• Identifies decisions</li> </ul> | <ul style="list-style-type: none"> <li>• Equalizes participation of participants</li> <li>• Identifies communication problems</li> <li>• Solicits feedback</li> <li>• Manages conflict</li> <li>• Provides and aids the group's emotional climate</li> </ul> |

**Table 2. Facilitator functions and qualities [3].**

| Facilitator functions and qualities  |   |
|--|---|
| 1. Plans and designs the meeting   | 2. Listens to, clarifies and integrates information       |
| 3. Demonstrates flexibility  | 4. Keeps group outcome focused                            |
| 5. Creates and reinforces an open, positive and participative environment                    | 6. Selects and prepares appropriate technology            |
| 7. Directs and manages the meeting   | 8. Develops and asks the right questions                  |
| 9. Promotes ownership and encourages group responsibility                                    | 10. Actively builds rapport and relationships             |
| 11. Demonstrates self-awareness and self-expression  | 12. Manages conflict and negative emotions constructively |
| 13. Encourages/supports multiple perspectives  | 14. Understands technology and its capabilities           |
| 15. Creates comfort with and promotes understanding of the technology and technology outputs | 16. Presents information to group                         |

**Table 3. Facilitator skills and qualities [12].**

| Facilitator skills and qualities           |                       |
|--|-----------------------|
| Good communication skills                  | Ego-less facilitation |
| Flexibility                                | Task focus            |
| Understanding the group and its objectives | Leadership            |

The answers to these questions may help us to better understand the relationship between facilitators' characteristics and behaviors and meeting outcomes (e.g. perceived meeting success). Moreover, it may provide a basis for guidelines what facilitators must be or do to increase the probability of high quality GSS meetings. From a practitioner perspective, it may help designers of facilitation training courses.

The remainder of this paper is structured as follows. In the next section, we summarize research into GSS facilitation. Next, we present the method that we followed in our study in more detail. The fourth section reports on the results of our study, which are subsequently discussed in Section 5. The paper concludes with the implications of our findings, the study's limitations, and directions for future research.

## 2. Background

In this section we summarize the literature on GSS facilitation tasks and functions. It should be noted that a distinction exists between 'technical facilitation' and 'group process facilitation' [4]. Technical facilitation is aimed at assisting the

participants with the technology and is often executed by a chauffeur or technographer [7]. In general, this sort of facilitation avoids adding communication and goal oriented direction to the working group. This paper, in contrast, focuses on group process facilitation. By this we mean facilitation that moderates participants and their interactions regarding stated and emergent tasks toward creating meeting outcomes. Since this study addresses GSS settings, orchestrating communications and moving toward results are mediated by interaction with supporting technology.

Facilitation tasks may focus on meeting *process* or meeting *content* [11]. Process facilitation provides structure and general support to groups during the meeting. It involves ensuring that an equality of participation is achieved, blind alleys are not overtly explored, and time is managed appropriately [8]. Content facilitation focuses on the content of the meeting, analyzing the data, and displaying relevant issues. With content facilitation the facilitator gives more information or direction than the impartial information or direction provided with process facilitation [11]. While some argue that facilitators should not make content contributions

[11], others maintain that content and process facilitation are not exclusive and should inform each other to achieve a multiplier effect [8].

Dickson et al. [7] distinguish between two types of process facilitation: ‘*task interventions*’, meant to focus the group’s attention on the task, and ‘*interactional interventions*’, aimed at the participants and their relations. The tasks of a facilitator with these two types of interventions differ significantly (table 1). Other authors do not make a difference between task and interactional interventions. Clawson and Bostrom [3] collected information from experienced GSS facilitators about their most important tasks and categorized the feedback into sixteen facilitation dimensions. These dimensions show the qualities a facilitator must have and the functions (s)he must execute during a meeting (table 2).

Not only functions, but also skills and qualities of character are believed to be an important factor in being successful at helping groups to achieve their goals. Niederman et al. [12] interviewed 37 facilitators with different GSS experience. From these interviews a number of required qualities of character came forth (table 3). The importance of these qualities was perceived differently between experienced and non-experienced facilitators. More experienced facilitators considered ‘flexibility’ important. This may be due to some insecurity of non-experienced facilitators about the reliability of the GSS technology. The most important qualities appeared to be ‘good communication skills’ and ‘ego-less facilitation’.

The above facilitation studies take the group as given. Facilitators themselves were the source of information on what they do and how important that is to achieve desired results. We are not aware of any research efforts that address the participants’ perception on facilitation directly. Some field research indirectly touches the issue briefly. For example, Vreede [17] investigated the added value of GSS in an insurance company. Although its focus was not on facilitation, the study concluded that an effective facilitator does not draw too much attention. If the meeting goes well, the participants perceived the facilitator to blend into the environment.

### 3. Research approach

The epistemological underpinning of this research is phenomenology. This qualitative research followed the approach described in detail in [16 cf 5]. Riemen performed a qualitative inquiry into the phenomenon of “caring interaction” between a nurse and his or her patients. This approach consists of the following steps: Stakeholders are interviewed regarding the phenomenon under investigation. From the transcribed interview, statements are extracted and grouped into clusters. The clusters may form a superstructure

of categories, which are finally described in English to provide for a rich description of the phenomenon. After describing the data sources for our study, we describe each step in more detail below.

#### 3.1 Data sources

Participants’ experiences and thoughts on facilitation were collected in interviews with participants of a total of ten GSS meetings, facilitated by eight different facilitators from January 2000 to April 2001. These meetings were attended by 133 participants with 9 to 20 participants per meeting, with an average of 13.3 participants. The meetings were all organized in the Netherlands, both at a university GSS facility and at facilities that were set up at the problem owner’s preferred location. Each meeting was organized at the problem owner’s request who provided for a market-conform consultancy fee for both facilitation and GSS support.

#### 3.2 Conducting interviews

Immediately after each meeting, a researcher who did not attend the meeting would approach the participants and ask for two volunteers who were willing to co-operate. In a separate room, the volunteers were asked to comment freely on the meeting and particularly on the behavior of the facilitator. The length of the interviews varied from five to twenty-five minutes, depending on the number of comments made by the interviewees.

At the beginning of each interview, the objectives of the interview were briefly explained to the volunteers. The researcher explicitly stressed the fact that it was not about *evaluating* the facilitator of today’s meeting, but to find out more about the interviewees’ perception on facilitation in general. Each interview was semi-structured and consisted of the following questions (the order in which questions were asked varied based on the responses):

1. What is your first reaction on today’s meeting in general?
2. If you were asked to describe very briefly the behavior and actions of the facilitator to someone who did not attend today’s meeting, how would you do that?
3. If you were asked to describe the tasks and functions of the facilitator to someone who has never participated in a GSS meeting, what would you say?
4. Looking at the facilitator’s actions and/or behavior today, does anything come to mind that you would describe as being explicitly effective?
5. Were there any actions or behavior that you would describe as being less effective or ineffective?
6. If you were asked to validate the facilitator’s performance on, let’s say, a 1-10 scale or any other way, what criteria would you use to support your decision?

7. Do you feel that the role of a facilitator is very different from the role of a chairman in a “normal” meeting? If so, in what way?
8. Are there any other comments you would like to make on either today’s meeting or on the facilitation that were not yet made during this interview?

Each interview was recorded on audio-tape and, afterwards, literally transcribed. As Dutch is the mother tongue of all participants as well as the first two authors, the interviews were conducted and transcribed in Dutch. Before collecting the set of 10 interviews that were used in this study, two interviews were conducted to pilot the flow of the issues addressed and to test whether meaningful results could be derived from the transcripts. This resulted in a few small changes in the issues addressed and phrasing of the questions. The two pilot interviews were not included in the analysis.

### 3.3 Coding of interviews

The interview transcripts were coded by highlighting participant statements that the authors felt were relevant and directly or indirectly referred to effective or ineffective facilitation behavior. Statements could consist of a few words or a whole paragraph. Each transcript was coded by both Dutch speaking researchers. A number of coding rules emerged after comparing the respective coding results of the first two interviews. After coding the remaining transcripts, a few coding differences were identified, discussed and resolved. In the end, the interviews led to a total of 250 facilitation-related statements. Table 4 shows a small selection of these taken from various interviews.

**Table 4: Selection of interview statements.**

| Examples of statements   |
|--|
| • “He was not conspicuous- and that was good”.   |
| • “When the group is very little motivated, at a certain moment the facilitator will need to start interfering and focus the group”. |
| • “At times I felt the oral discussion was a bit too short”.   |
| • “He was very sensitive to the atmosphere in the group”.  |
| • “You need to be flexible in order to react to ad hoc situations and hot issues”.   |
| • “Probably it would have been better if he had had more topical knowledge”.   |
| • “A facilitator’s role can be compared to that of a show master.”   |

### 3.4 Organizing statements

The next step involved organizing the identified statements into a number of categories. To this end, we first imported the list of statements into GroupSystems’ Categorizer tool. Going through the list of statements, we looked for common themes and issues. These were initially defined as clusters (“buckets” in Categorizer). Then an iterative process of placing statements and re-visiting clusters was carried out. During this process, statements were sometimes re-placed, while clusters were merged, re-named, or newly created. Initially, we identified 21 clusters. In the end, a total of 27 clusters of themes emerged. The 27 clusters covered a broad range of facilitation aspects, varying from general appearance to specific actions and behavior. They also provide a first indication of what participants expect, appreciate and/or dislike when considering group facilitation. See table 5 for an example cluster.

**Table 5. Content of cluster “Introduction/- explanation of meeting process & rules”.**

| <i>Cluster “Introduction/explanation of meeting process &amp; rules”</i>   |
|--|
| • <i>“Making sure that any misunderstandings that might occur are clarified.”</i>  |
| • <i>“Instructs.”</i>  |
| • <i>“The explanation and how you need to do it should come from him.”</i>   |
| • <i>“Important: we went over the whole process beforehand.”</i>   |
| • <i>“The “rules” of the meeting create a certain scope – and they should be clear.”</i>                                   |
| • <i>“I think he needs to make sure the process stays very clear/comprehensible.”</i>                                      |
| • <i>“Very comprehensively explained how the questions should be interpreted and that, I do think, is very important.”</i> |
| • <i>“He should be able to communicate what the outcome will be used for.”</i>   |
| • <i>“She explains the meaning of the process.”</i>  |
| • <i>“He should clarify the questions.”</i>  |
| • <i>“Illustrates the methods, the questions, and their meaning.”</i>  |

### 3.5 Finding a ‘superstructure’ of categories

After identifying the 27 clusters, the next step concerned the further organization of the cluster in a ‘superstructure’ of categories. Interpreting the content and meanings of the various clusters, we again found that these could be grouped to create a superstructure of 12 categories. This activity was carried out by placing post-it stickers with the cluster’s names on a whiteboard and shifting and organizing them until a satisfying superstructure emerged. During this process, a

number of categories were re-grouped and/or re-named in order to create a clear superstructure referring to main aspects of facilitation. The final structure is presented in Section 4.

### 3.6 Define formulated meanings for rich description

The final step in our study was aimed at arriving at a comprehensive description of the phenomenon “effective facilitation from a participants’ perspective”. To arrive at this description, we first transcribed the individual statements in each category into so-called “formulated meanings”. Formulated meanings are descriptions of what the researcher interprets that the interviewees meant with their statements. During the transcription of formulated meanings, redundancy in the list of individual statements was removed. Appendix I lists the resulting set of formulated meanings. Finally, the formulated meanings served as a basis to create a rich description, in English, of the phenomenon investigated. This rich description is presented in Section 4.

## 4. Results

In this section we present the results of our study. We first describe the categories and its constituent clusters that were determined by organizing the interviewees’ statements. Then, we present the rich description of the phenomenon “effective GSS facilitation from a participant’s perspective”.

### 4.1 Clusters & Categories

The grouping of the 250 individual statements that were isolated from the interview transcripts yielded 27 clusters that could be organized into 12 categories. The categories range from activities that have to be done before, during, and after a GSS meeting, to personal skills and human qualities. The complete list is as follows:

- A. Workshop design**
  - A1. Preparation of script
  - A2. Choosing/preparing meeting accommodation
- B. Required Knowledge**
  - B1. Technical/GSS knowledge
  - B2. Content knowledge
  - B3. Knowledge of group processes/group dynamics
- C. Setting the stage**
  - C1. Introduction/explanation of meeting process & rules
  - C2. Introduction/explanation of GSS technology
  - C3. Introduction/explanation of meeting topic
- D. Being available**
  - D1. Being available/approachable
- E. Human qualities and attributes**
  - E1. Self projection
  - E2. Social skills
- F. Being sensitive / building rapport**
  - F1. Building rapport with the problem owner

F2. Being sensitive to the group

### **G. Intermediate results / group output presentation**

G1. Explaining/resuming/interpreting group output and giving feedback

### **H. Directing**

*Meeting process:*

H1. Motivating/stimulating the group

H2. Giving free rein / Tightening the reins

*Group towards output/results:*

H3. Bringing the group to results / Effectiveness

H4. Leading the group and its discussion in general

### **I. Guarding**

I1. Guarding the discussion focus

I2. Time management (balancing time and results)

### **J. Script evaluation/modification and redesigning process**

J1. Structuring discussions

J2. Process adaptivity

### **K. Being sensitive to results**

K1. Being sensitive to the meeting content/topic

K2. Respecting the group results

### **L. After-care**

L1. After-care

Many of the above categories describe aspects of the facilitator’s role and behavior that are closely related. For example, a facilitator’s social skills are crucial to him or her for being able to be sensitive to the group atmosphere and to the participants’ satisfaction. Also, his or her topical knowledge has an important influence on the way he or she is able to create structure and clarity during a group discussion. To illustrate some of these categorical interdependencies, figure 1 depicts them graphically. An arrow signifies which category of skills or activities is required for another. It has to be noted that at this stage in the research, the interdependencies between the categories have not yet been analyzed in detail. Figure 3 should therefore be regarded as a preliminary outcome.

Our interviewees had participated in dissimilar GSS meetings and therefore had varying experiences that were reflected in the interviews. Also, the interviewees’ different perspectives on facilitation, were clearly reflected in the content of the statements that were identified from the transcripts. One transcript would sometimes mention one issue six or seven times in different ways, while the same issue might be completely ignored in another interview. Yet a considerable number of issues were mentioned by almost all of interviewees and we can, therefore, assume that they are considered to be important aspects of facilitation. A summary of the number of statements per category and in how many interviews a category was addressed is given in table 6.

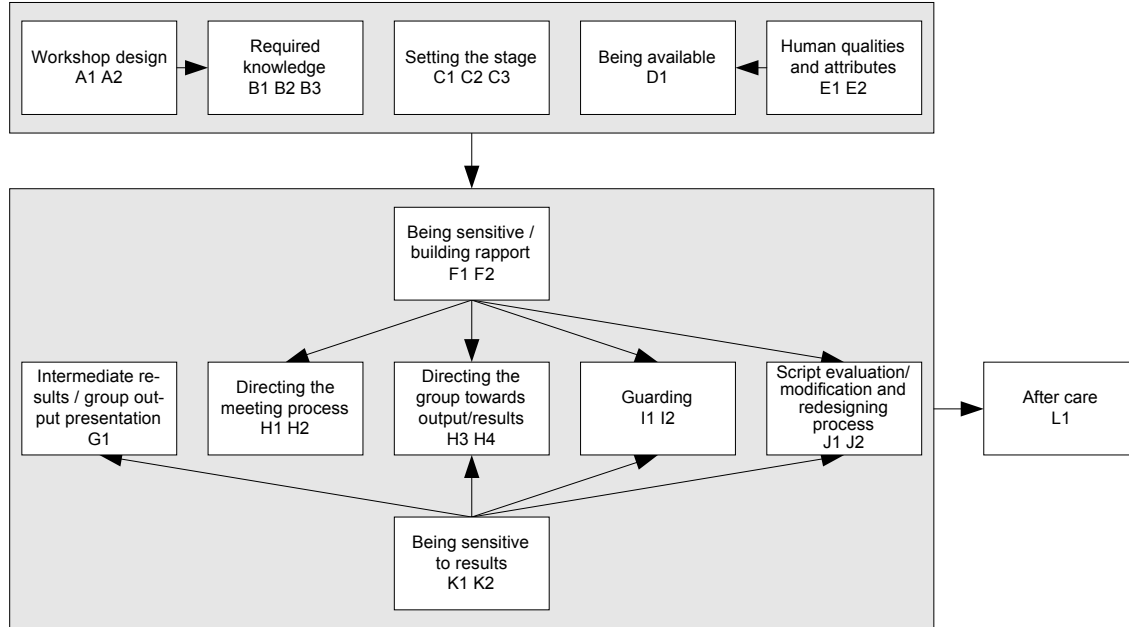


Figure 1. Graph showing the interrelated categories of themes.

Table 6. Distribution of statements per category and interview.

| Category   | Statements |            | Interviews    |       |
|--|------------|------------|---------------|-------|
|  | #          | %          | #             | %     |
| A Workshop design                                | 29         | 11.6%      | 6             | 60.0% |
| B Required Knowledge                             | 28         | 11.2%      | 6             | 60.0% |
| C Setting the stage                              | 39         | 15.6%      | 9             | 90.0% |
| D Being available                                | 1          | 0.4%       | 1             | 10.0% |
| E Human side                                     | 31         | 12.4%      | 7             | 70.0% |
| F Being sensitive/ building rapport              | 17         | 6.8%       | 8             | 80.0% |
| G Intermediate results/group output presentation | 11         | 4.4%       | 7             | 70.0% |
| Ha Directing process                             | 18         | 7.2%       | 9             | 90.0% |
| Hb Directing towards output/results              | 24         | 9.6%       | 5             | 50.0% |
| I Guarding                                       | 23         | 9.2%       | 4             | 40.0% |
| J Script evaluation/ modification                | 20         | 8.0%       | 5             | 50.0% |
| K Being sensitive to results                     | 8          | 3.2%       | 5             | 50.0% |
| L After-care                                     | 1          | 0.4%       | 1             | 10.0% |
| <i>Total</i>                                     |            | <i>250</i> | <i>100.0%</i> |       |

From the interview transcripts, it appeared that participants especially mentioned facilitation aspects that they felt were either explicitly good or explicitly bad or missing during their meeting. For example, according to an interview transcript one facilitator did not succeed in creating adequate group focus during the meeting. When we asked the interviewees to define facilitation tasks, “realizing group focus” was considered to be very important, while it was hardly mentioned in interviews when sufficient group focus existed. Accordingly, participants who noted that the facilitator interfered too much with the content of the discussion also mentioned “neutrality” as a prime facilitator function. In addition, it appeared that some facilitation tasks and functions

were considered self-evident and were therefore hardly mentioned. Yet given the number and variety of the issues that emerged from the transcripts and the fact that the last two interviews yielded little new information, we have reason to believe that the clusters and categories were saturated.

#### 4.2 Rich descriptions

Based on the formulated meanings for each of the clusters and categories (Appendix I), we synthesized rich descriptions for each of the categories. These rich descriptions combined represent the final outcome of our study: a description of effective facilitation through the eyes of the participants in the meeting. The rich descriptions are given below:

- A. Workshop design.** The facilitator should prepare the meeting, carefully taking aspects such as the meeting objective, the timeline, the topic, and the critical issues into account. Also, the facilitator should choose and prepare adequate meeting accommodation.
- B. Required knowledge.** The facilitator should have substantial knowledge and experience on the GSS instruments, the meeting topic, and group processes & group dynamics.
- C. Setting the stage.** At the beginning of the meeting, the facilitator should give a clear and understandable introduction, including an introduction to the meeting process and its rules, on the GSS technology and its possibilities, and on the meeting topic.
- D. Being available.** The facilitator has to be available for questions, explanations etc. throughout the meeting.
- E. Human qualities and attributes.** A facilitator should balance between appearing relaxed, neutral and a little

reserved and being in charge of the meeting, being somewhat charismatic and spontaneous. Also, a facilitator should possess a number of basic social skills such as being able to listen and communicate.

- F. Being sensitive / building rapport.** During the meeting, the facilitator should interact with the problem owner and consult him on a number of issues such as the meeting progress and the discussion content. Also, the facilitator should make sure that all participants can participate in a meaningful, significant and equal way. (S)he should easily interact with the group and be broadly accepted.
- G. Intermediate results / group output presentation.** The facilitator should arrange and/or give summaries and/or feedback during & after the meeting, and be able to identify interesting contributions from less interesting ones.
- H. Directing**
- **Meeting process.** The facilitator should motivate and stimulate the group to preserve a productive and constructive environment during the meeting. Also, (s)he should be able to tighten the reins or give free rein if the situation calls for it.
  - **Group toward output/results.** The facilitator should make sure that the group achieves its goals and guard a balance between results and time. Also, the facilitator should lead and direct the group making sure that results-oriented discussions start and continue.
- I. Guarding.** The facilitator should guard the discussion focus, directing the discussions to the main issues in a determined yet acceptable manner. The facilitator should keep track of time but not break off activities too soon.
- J. Script evaluation/modification and redesigning process.** The facilitator should structure the oral as well as the electronic discussion and show the flexibility to adapt the script or meeting process to 'hot issues' or an unexpected turn in the discussion.
- K. Being sensitive to results.** The facilitator should monitor and understand the electronic discussion and the subject(s) treated, (s)he should analyze the output and be able to quickly distil trends from participants' contributions. The facilitator should handle the contributions respectfully.
- L. After-care.** The facilitator should interpret the meeting outcomes.

## 5. Discussion

Various authors such as Clawson and Bostrom [3], Dickson et al. [7], and Niederman et al. [12] have studied the phenomenon of GSS facilitation and distinguished aspects that are considered to be important. In this section we compare and contrast our findings with the Clawson and Bostrom [3] list, as this appears to be most widely used in literature. Table 7 shows how the categories relate to the Clawson and Bostrom dimensions. An 'X' signifies overlap.

When comparing the two lists, it is worth noting that the sources are different: Clawson and Bostrom [3]'s dimensions are based on general considerations by experienced facilitators, while our list was derived from participants' feedback following specific meetings. With this in mind, it is interesting to see that the two lists are fairly similar, although they may vary in structure and hierarchy (some dimensions in the Clawson and Bostrom list were listed as aspects of a certain category in our list and vice versa). Apparently, the participants' view on GSS facilitation concurs considerably with the facilitators' own views.

Yet, there are a number of interesting differences worth noting. *First*, Clawson and Bostrom's list does not take the phase of the meeting into account. We noticed that interviewees mentioned different tasks and functions at different phases in the meeting process. For example, we identified many statements on the category named "Setting the stage". While issues such as "Creating a positive working environment" and "Presenting clear information" are found to be very important throughout the meeting, these require extra attention at the meeting's initiation. *Second*, we found a clear distinction between process- and outcome-related tasks and behavior. They both seem vital for creating participant satisfaction, but require distinct skills and practices. *Third*, another interesting difference is the fact that (as part of "Directing group towards results") our interviews stressed the responsibility of the facilitator to *make* a group achieve results much more than in the Clawson and Bostrom list. *Fourth*, "time management" (part of "Guarding") was an aspect that was very often mentioned by our interviewees who considered it quite often to be a problem. The Clawson and Bostrom list does not mention this aspect. *Finally*, the Clawson & Bostrom list also mentions two aspects that we did not explicitly find in the participant's statements: *Creating ownership responsibility* and *Managing conflict and negative emotions*. We suspect that this is due to the fact that the participants did not explicitly see this happening during a meeting or felt it was lacking.

## 6. Conclusions

It remains surprising that despite many studies on GSS facilitation, we found no research that explicitly investigates participants' views on facilitation. Our study showed that even inexperienced GSS participants often had an outspoken opinion about the meeting and the facilitator. This study resulted in a rich description of the phenomenon 'effective GSS facilitation from a participant perspective'. The interviews yielded a comprehensive overview of facilitation tasks and behaviors that the interviewees felt were

**Table 7. Overlap between Clawson & Bostrom [3] and our study results.**

| This study                       | Clawson and Bostrom                       |   |   |  |                                     |                                |   |   |  |                                   |                          |                                     |   |   |   |                                |
|----------------------------------|---|---|---|--|-------------------------------------|--------------------------------|---|---|--|-----------------------------------|--------------------------|-------------------------------------|---|---|---|--------------------------------|
|                                  | Promotes ownership & group responsibility | Demonstrates self-awareness & self-expression | Appropriately selects & prepares technology | Listens to, clarifies & integrates information | Develops & asks the right questions | Keeps group focused on outcome | Creates comfort with and promotes understanding of the technology | Creates & reinforces an open, positive, & participative environment | Actively build rapport & relationships | Presents information to the group | Demonstrates flexibility | Plans & designs the meeting process | Manages conflict & negative emotions constructively | Understands technology & its capabilities | Encourages / supports multiple perspectives | Directs & manages the meetings |
| Workshop design                  |   |   | X   |  |                                     |                                |   |   |  |                                   |                          | X                                   |   |   |   |                                |
| Required knowledge               |   |   |   |  |                                     |                                |   |   |  |                                   |                          |                                     |   | X   |   |                                |
| Setting the stage                |   |   |   | X  |                                     | X                              | X   |   | X                                      |                                   |                          |                                     |   |   |   |                                |
| Being available                  |   |   |   |  |                                     |                                |   |   |  |                                   |                          |                                     |   |   |   |                                |
| Human qualities and attributes   |   | X   |   |  |                                     |                                |   |   |  |                                   |                          |                                     |   |   |   |                                |
| Being sensitive/building rapport |   |   |   |  |                                     |                                |   | X   |  |                                   |                          |                                     |   |   |   |                                |
| Results/output presentation      |   |   |   | X  |                                     |                                |   |   |  |                                   |                          |                                     |   |   |   |                                |
| Directing meeting process        |   |   |   |  | X                                   |                                | X   |   |  | X                                 |                          |                                     |   | X   | X   |                                |
| Directing group towards results  |   |   |   |  | X                                   | X                              |   |   |  |                                   |                          |                                     |   |   | X   |                                |
| Guarding                         |   |   |   |  |                                     | X                              |   |   |  |                                   |                          |                                     |   |   |   |                                |
| Script evaluation/ modification  |   |   |   |  |                                     |                                |   |   |  | X                                 |                          |                                     |   |   |   |                                |
| Being sensitive to results       |   |   |   |  | X                                   |                                |   |   |  |                                   |                          |                                     |   |   |   |                                |
| After-care                       |   |   |   |  |                                     |                                |   |   |  |                                   |                          |                                     |   |   |   |                                |

instrumental for a GSS facilitator to be effective. Although more interviews might have yielded additional information, we feel that we were able to uncover the essential structure of effective GSS facilitation. In this concluding section, we briefly describe the implications of our study, its limitations, and directions for further research.

**6.1 Implications**

Based on the results of our study, we feel there are a number of implications for research and practice. *First*, with respect to research we propose that our rich description and formulated meanings of GSS facilitation tasks and behavior provide sufficient material for the following purposes:

- It may inform studies that observe facilitators in action.
- It may inform the design of experimental procedures in which facilitation behavior is the dependent variable or must be kept constant across treatments.
- It may inform a questionnaire to let participants evaluate a facilitator’s effectiveness and relate this to participants’ perceptions on meeting success and satisfaction.

*Second*, with respect to practice we see our rich description and formulated meanings have value for both GSS developers and GSS users:

- For GSS developers:
  - It may inform training programs that GSS developers offer to customers, e.g. beginning GSS facilitators. This may include sample agendas and cases (‘war stories’) that address specific facilitation activities.
- For facilitators and organizations using GSS:
  - It may inform training programs for (internal) facilitators.
  - It may inform assessment instruments for (internal) facilitators that can be used, for example, to evaluate meetings, to decide on bonuses, to inform performance appraisal meetings, and to support self improvement initiatives.

**6.2 Limitations**

This study has a number of limitations that have to be taken into account. *First*, the study was obviously limited to the



participant perspective only. The participants we interviewed may not have been aware of all actions that the facilitator completed to improve the meeting process. At times, a facilitator may for example use tactics that are considered somewhat unpleasant by participants but are in fact effective in working towards a result (e.g. creating time pressure). Therefore, not all relevant issues may have been mentioned. *Second*, our field data comes from meetings and interviews that took place in the Netherlands with Dutch participants. Hence, the results may not transfer to meeting environments where the norms regarding meeting purposes and processes systematically differ from those in Holland. *Finally*, we have studied a number of meetings in which a variety of methods and techniques were used by different facilitators. Yet the GroupSystems application supports a myriad of meeting methods and techniques. Applying other methods and techniques may require different facilitator behavior and actions, and as a result may lead to a different perception by the meeting participants.

### 6.3 Future research

We see a number of avenues for future research efforts. *First*, we want to establish more insight into the relative important of the various elements of our rich description. For example, do participants regard 'being available' equally important as 'required knowledge on the meeting topic'? *Second*, we will use the results of this study together with the other literature on GSS facilitation tasks to design a questionnaire that can be used to evaluate facilitator performance in GSS meetings. Such a questionnaire could also be used to measure possible differences in perception between participants and facilitators. *Finally*, we intend to carry out a similar study in the area of *distributed* GSS meeting facilitation. From a practical perspective, this area is growing in importance as more and more companies feel the need to organize effective distributed meetings. Yet, there is scant literature that informs facilitators how to moderate such meetings effectively.

### References

- [1] ANSON, R., BOSTROM, R., WYNNE, B. (1995), 'An Experiment Assessing GSS and Facilitator Effects on Meeting Outcomes'. *Management Science*, 41(2), 189-208.
- [2] BRIGGS, R.O., VREEDE G.J. DE, NUNAMAKER, J.F. JR., TOBEY, D. (2001), 'ThinkLets: Achieving Predictable, Repeatable Patterns of Group Interaction with GSS', *Proceedings of the 34th HICSS*, Los Alamitos: IEEE Society Press.
- [3] CLAWSON, V.K., BOSTROM, R.P. (1996), 'Research Driven Facilitation Training for Computer Supported Environments'. *Group Decision and Negotiation*, No. 1, 7-29.
- [4] CLAWSON, V.K., BOSTROM, R.P. AND ANSON, R. (1993). 'The Role of the Facilitator in Computer-Supported Meetings.' *Small Group Research*, 24(4), 547-565.
- [5] CRESWELL, J.W. (1998), *Qualitative Inquiry and Research Design: Choosing Among Five Traditions*, Thousand Oaks, CA: Sage.
- [6] DESANCTIS, G., GALLUPE, R.B. (1987), 'A Foundation for the study of Group Decision Support Systems'. *Management Science*, 33(5), 589-609.
- [7] DICKSON, G., LIMAYEM, M., LEE PARTRIDGE J., DESANCTIS, G. (1996), 'Facilitating Computer Supported Meetings: A Cumulative Analysis In A Multiple Criteria Task Environment'. *Group Decision and Negotiation*, 5(1), 51-72.
- [8] EDEN, C. (1990). 'The Unfolding Nature of Group Decision Support. In C. Eden, J. Radford (Eds.), *Tackling Strategic Problems-The Role of Group Decision Support*. Sage.
- [9] FJERMESTAD, J., HILTZ, S.R. (2000), A Descriptive Evaluation of Group Support Systems Case and Field Studies, *Journal of Management Information Systems*, 17(3).
- [10] GEORGE, J., DENNIS, A., NUNAMAKER, J. (1992), 'An Experimental Investigation of Facilitation in an EMS Decision Room'. *Group Decision and Negotiation*, No. 1, 57-70.
- [11] GRIFFITH, T., FULLER M., NORTHGRAFT G. (1998), 'Facilitator Influence in Group Support Systems'. *Information Systems Research*, 9(1), 20-36.
- [12] NIEDERMAN, F., BEISE, C.M., BERANEK, P.M. (1996), 'Issues and Concerns about Computer-Supported Meetings: The Facilitator's Perspective'. *MISQ*, 20(1), 1-22.
- [13] NUNAMAKER, J.F. JR., DENNIS, A., VALACICH, J., VOGEL, D., GEORGE, J.F. (1991). Electronic Meeting Systems to Support Group Work, *Communications of the ACM*, 34(7), 40-61.
- [14] NUNAMAKER, J.F. JR., VOGEL, D.R., HEMINGER, A., MARTZ, B., GROHOWSKI, R., MCGOFF, C. (1989). Experiences at IBM with GSS, *Decision Support Systems*, 5(2), 183-196.
- [15] POST, B.Q. (1993). A Business Case Framework for Group Support Technology, *Journal of MIS*, 9(3), 7-26.
- [16] RIEMEN, D.J. (1986), The essential structure of caring interaction: Doing phenomenology, in: Munhall, P.M., Oiler, C.J. (eds), *Nursing research: A qualitative perspective*, Norwalk, CT: Appleton-Century-Crofts, 85-105.
- [17] VREEDE, G.J. DE (2001), A Field Study into the Organizational Application of GSS, *Journal of Information Technology Cases & Applications*, 2(4).
- [18] VREEDE, G.J. DE, BRUIJN, H. DE (1999), Exploring the Boundaries of Successful GSS Application: Supporting Inter-Organizational Policy Networks, *DataBase*, 30, 3-4, 111-131.
- [19] VREEDE, G.J. DE, P.C. MULLER (1997), Why Some GSS Meetings Just Don't Work: Exploring Success Factors of Electronic Meetings, *Proceedings of the 7th ECIS*, Cork, Ireland, Vol. III, 1266-1285.
- [20] VREEDE, DE, G.J., BRIGGS, R.O., DUIN, VAN, R., ENSERINK, B. (2000), 'Athletics in Electronic Brainstorming: Asynchronous Electronic Brainstorming in Very Large Groups', *Proceedings 33rd HICSS*, Los Alamitos: IEEE Computer Society Press.
- [21] VREEDE, G.J. DE, DAVISON, R., BRIGGS, R.O. (2001), How A Silver Bullet May Lose Its Shine: Learning from Failures with Group Support Systems, *working paper*, Delft University of Technology.

## Appendix I. Formulated meanings

| Category                  | Clusters   | Formulated meanings  |
|---------------------------|--|--|
| <b>Workshop design</b>    | <i>A1. Preparation of script</i>                                     | <ol style="list-style-type: none"> <li>The facilitator should prepare the meeting well.</li> <li>The facilitator should take enough time to prepare the meeting.</li> <li>The facilitator should identify the meeting objectives and desired outcomes.</li> <li>The facilitator should identify the critical issues that have to be addressed in the meeting.</li> <li>The facilitator should carefully delineate the meeting topic / the ground that has to be covered during the meeting so that the meeting does not become too broad.</li> <li>The facilitator should prepare questions and group assignments that stimulate and trigger participation. The purpose and desired outcome of each question or group assignment should be clear.</li> <li>The facilitator needs to organize the meeting in the sense that he determines which method will be used for which issue.</li> <li>The facilitator should prepare a meeting script that outlines the course of meeting so that he or she can prevent the participants from wandering into pitfalls or irrelevant side-steps.</li> <li>The facilitator should prepare the meeting in such a way that there will be ample room for discussions.</li> </ol> |
|                           | <i>A2. Choosing / preparing meeting accommodation</i>                | <ol style="list-style-type: none"> <li>The facilitator should make sure that the arrangement of the meeting room enables all participants to see the central screen and each other.</li> </ol>   |
| <b>Required knowledge</b> | <i>B1. Technical / GSS knowledge</i>                                 | <ol style="list-style-type: none"> <li>Facilitator should have knowledge of GSS instruments.</li> <li>Facilitator should have experience using GSS instruments.</li> <li>Facilitator should not make technical mistakes during the meeting.</li> </ol>   |
|                           | <i>B2. Content knowledge</i>   | <ol style="list-style-type: none"> <li>While staying in the background, the facilitator should be familiar with the topic of the meeting and have a command of it.</li> <li>The facilitator should be able to relate to the problem situation / issue at hand.</li> </ol>  |
|                           | <i>B3. Knowledge of group processes/group dynamics</i>               | <ol style="list-style-type: none"> <li>The facilitator should use efficient methods to organize intermediate results. (More general: the facilitator should apply/use/chose efficient and effective methods to let the meeting participants create and process contributions).</li> <li>Example: The facilitator could ask participants to comment on what they observe looking at the results of a meeting activity.</li> </ol>   |
| <b>Setting the stage</b>  | <i>C1. Introduction / explanation of meeting process &amp; rules</i> | <ol style="list-style-type: none"> <li>The facilitator should introduce and explain the "rules of the game", i.e. the process rules, at the beginning of the meeting.</li> <li>The facilitator should introduce and explain the meeting script at the beginning of the meeting.</li> <li>The facilitator should clarify misunderstandings about the meeting process immediately.</li> <li>The facilitator should introduce and explain each question or group activities.</li> <li>The facilitator should explain how the information generated by the group should be interpreted.</li> <li>The facilitator should explain what the outcomes will be used for.</li> </ol>   |
|                           | <i>C2. Introduction / explanation of GSS technology</i>              | <ol style="list-style-type: none"> <li>The facilitator should briefly and clearly instruct the group how to use the technology; he or she should explain how the system works and how the group should use it.</li> <li>The facilitator should briefly summarize what the meeting facilities encompass, what the possibilities are, and which instruments the participants will be working with.</li> <li>The facilitator should make sure that even poorly computer literate participants learn how to use the GSS in a very short time.</li> <li>The facilitator should clarify technical misunderstandings immediately</li> <li>The facilitator should use a non-relevant "warm-up" question to allow all participants to get acquainted to the technology.</li> <li>Example: The facilitator should explain how to "surf" through a list of ideas.</li> </ol>  |
|                           | <i>C3. Introduction / explanation of meeting topic</i>               | <ol style="list-style-type: none"> <li>The facilitator should clarify misunderstandings about the meeting topic immediately.</li> <li>The facilitator should provide for or organize a clear introduction and explanation of the meeting topic.</li> <li>The facilitator should explain the purpose of the meeting: he or she should explain what the meeting could and should result in.</li> <li>The facilitator should not force his or her own opinion regarding the topic upon the participants.</li> <li>The facilitator should make terminology / concepts (i.e. the content) clear before allowing the group to start working.</li> </ol>  |
| <b>Being available</b>    | <i>D1. Being available / approachable</i>                            | <ol style="list-style-type: none"> <li>The facilitator has to be available and approachable for questions, explanations etc.</li> </ol>  |

| Category   | Clusters   | Formulated meanings   |
|--|--|---|
| Human qualities and attributes                   | <i>E1. Self projection</i>   | <ol style="list-style-type: none"> <li>1. A facilitator should balance between: <ul style="list-style-type: none"> <li>• Appearing relaxed, calm, and patient.</li> <li>• Appearing neutral.</li> <li>• Appearing kind and friendly.</li> <li>• Appearing spontaneous.</li> <li>• Appearing to relate to the participants.</li> <li>• Appearing acceptable to all participants.</li> <li>• Appearing a little reserved and restrained.</li> </ul> </li> <li>2. And at the same time: <ul style="list-style-type: none"> <li>• Appearing a little charismatic.</li> <li>• Appearing in charge of the meeting.</li> <li>• Appearing to know and understand what it's all about.</li> <li>• Appearing resolved to use his or her authority if necessary.</li> <li>• Being present.</li> <li>• Have a professional appearance.</li> </ul> </li> </ol> |
|  | <i>E2. Social skills</i>   | <ol style="list-style-type: none"> <li>1. The facilitator should not be too authoritative.</li> <li>2. The facilitator should not be dominant.</li> <li>3. The facilitator should be open to his or her audience.</li> <li>4. The facilitator should (be prepared to) listen.</li> <li>5. The facilitator should be able to communicate.</li> <li>6. The facilitator needs to possess even more knowledge of human nature than a normal chairman.</li> </ol>  |
| Being sensitive / Building rapport               | <i>F1. Building rapport with the problem owner</i>                               | <ol style="list-style-type: none"> <li>1. During the meeting, the facilitator should interact with and consult the problem owner on: <ul style="list-style-type: none"> <li>• Content of participant contributions.</li> <li>• Discussion content.</li> <li>• Meeting progress.</li> <li>• Meeting program.</li> </ul> </li> </ol>  |
|  | <i>F2. Being sensitive to the group</i>  | <ol style="list-style-type: none"> <li>1. The facilitator should be sensitive to the general atmosphere in the group.</li> <li>2. The facilitator should not allow any participant to dominate the meeting.</li> <li>3. The facilitator should make sure during both electronic and oral meeting activities that every participant can participate in meaningful, significant and equal way.</li> <li>4. The facilitator should release pressure that is put on the group if this appears to block productivity.</li> <li>5. The facilitator should be broadly accepted and supported by the meeting participants.</li> <li>6. The facilitator should easily interact with the group.</li> </ol>  |
| Intermediate results / group output presentation | <i>G1. Explaining / resuming / interpreting group output and giving feedback</i> | <ol style="list-style-type: none"> <li>1. The facilitator should make summaries during and after the meeting.</li> <li>2. The facilitator should create room for feedback from the participants on (intermediate) meeting results.</li> <li>3. The facilitator must arrange for a summarizing discussion after each electronic activity so that the group gets a sense of what is the outcome.</li> <li>4. The facilitator should be able to identify the interesting contributions from the less interesting ones (including 'garbage').</li> </ol>  |
| Directing the meeting process                    | <i>H1. Motivating / stimulating the group</i>                                    | <ol style="list-style-type: none"> <li>1. If a discussion loses momentum or gets bogged down because of conflicting opinions, the facilitator should make remarks so that it becomes productive and constructive again.</li> <li>2. The facilitator should stimulate the participants to explain and justify their views.</li> <li>3. The facilitator should keep the group alert and on its toes.</li> <li>4. The facilitator should actively direct the meeting in case the group is very unmotivated.</li> <li>5. The facilitator should stimulate and encourage the participants to perform without being annoying.</li> <li>6. The facilitator should be able to provide advice and answers if the participants get stuck.</li> </ol>  |
|  | <i>H2. Giving free rein / Tightening the reins</i>                               | <ol style="list-style-type: none"> <li>1. The facilitator should be able to time his or her interventions.</li> <li>2. The facilitator should not interfere with the electronic discussion once it's underway.</li> <li>3. The facilitator should be let the group go if the situation calls for it, e.g. regarding humorous contributions.</li> <li>4. The facilitator must not let group switch to childish and playful behavior too soon.</li> </ol>   |

| Category  | Clusters   | Formulated meanings   |
|---|--|---|
| <b>Directing the group towards outputs / results</b>            | <i>H3. Bringing the group to results / Effectiveness</i>   | <p>Position 1: Empathic, active facilitator behavior regarding meeting effectiveness:</p> <ol style="list-style-type: none"> <li>The facilitator should guard a balance between idea quality, quantity and group effort; between results and time.</li> <li>The facilitator should make sure the group achieves its goals.</li> <li>The facilitator should make sure that the results of the meeting are visible.</li> <li>The facilitator should focus and move the group towards its targets.</li> <li>The facilitator should re-direct the group if their activities (e.g. discussions) are no longer directly contributing to the meeting goals.</li> </ol> <p>Position 2: Neutral, passive facilitator behavior regarding meeting effectiveness:</p> <ol style="list-style-type: none"> <li>The facilitator should not steer the group towards an end result.</li> <li>The facilitator should be independent; he or she should merely provide the facility but not take an active role in the discussion.</li> </ol> |
|   | <i>H4. Leading the group and its discussion in general</i> | <ol style="list-style-type: none"> <li>The facilitator should make sure that (electronic) discussions start and keep going.</li> <li>The facilitator should lead the group through its meeting process.</li> <li>The facilitator should be the group's chaperone, leading and directing it.</li> <li>The facilitator should lead the group from one question or group assignment to the other.</li> <li>The facilitator should provide overviews to the group by relating the results of different questions and/or group assignments.</li> <li>The facilitator should make sure that the participants explain what they mean.</li> <li>The facilitator should prevent circular, never ending discussions.</li> </ol>   |
| <b>Guarding</b>   | <i>I1. Guarding the discussion focus</i>                   | <ol style="list-style-type: none"> <li>The facilitator should be able to sense when a group discussion is straying from the central focus.</li> <li>The facilitator should re-direct the group's discussion to the main issues, in a determined yet acceptable manner.</li> <li>The facilitator should enforce the process rules if the discussion is straying.</li> <li>The facilitator should prevent the discussion from going all over the place, resulting in verbal spaghetti.</li> </ol>   |
|   | <i>I2. Time management (balancing time and results)</i>    | <ol style="list-style-type: none"> <li>The facilitator should not break off group activities (such as discussions) too soon.</li> <li>The facilitator should leave enough time in the agenda for the group to discuss issues, both electronically and orally.</li> <li>The facilitator should allow for enough time for discussing and evaluating (intermediate) meeting results.</li> </ol>  |
| <b>Script evaluation / modification and redesigning process</b> | <i>J1. Structuring discussions</i>                         | <ol style="list-style-type: none"> <li>The facilitator should structure both electronic and oral discussions.</li> </ol>  |
|   | <i>J2. Process adaptivity</i>                              | <ol style="list-style-type: none"> <li>The facilitator should distinguish between new opinions and reactions to opinions.</li> <li>While the meeting is in progress, the facilitator should recognize when he or she has to deviate from the pre-arranged meeting process.</li> <li>The facilitator should not religiously stick to the pre-planned meeting script.</li> <li>The facilitator should be able to adapt to an unexpected turn in the discussion or meeting momentum.</li> <li>The facilitator should allow for more oral discussion and feedback time if the need arises during the meeting.</li> <li>The facilitator should respect emerging diverse opinions and positions to emerge and allow ample time to handle them.</li> <li>The facilitator should be able to recognize Hot Issues during a meeting and let the group address these.</li> </ol>   |
| <b>Being sensitive to results</b>                               | <i>K1. Being sensitive to the meeting content / topic</i>  | <ol style="list-style-type: none"> <li>The facilitator should monitor and understand the electronic discussion.</li> <li>The facilitator should take action if he or she sees that the meeting is heading in the wrong direction from a content point of view.</li> <li>The facilitator should analyze the output and be able to quickly distil trends from the participants' contributions.</li> </ol>   |
|   | <i>K2. Respecting the group results</i>                    | <ol style="list-style-type: none"> <li>The facilitator should handle the participants' contributions in a respectful manner.</li> </ol>   |
| <b>After-care</b>   | <i>L1. After-care</i>                                      | <ol style="list-style-type: none"> <li>The facilitator could interpret the meeting outcomes.</li> </ol>   |