Which facilitation functions are most challenging: A global survey of facilitators

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Abstract

Facilitation is a key success factor for effective Group Support Systems (GSS) applications. The development of effective information systems that support facilitation becomes more critical than ever as decision making groups are larger and globally distributed. Developing technologies to support a facilitator is a promising avenue for creating successful distributed GSS. The call to support the facilitator with technologies is addressed frequently in literature. But the choice for which facilitation aspect to support does not seem to be guided by a framework, theory or data. This paper presents an approach to attain valid information for determining which facilitation functions practicing facilitators find most and least challenging. First, literature on facilitation functions is reviewed. Then a questionnaire is designed to collect data from over 300 facilitators around the globe. This questionnaire collects information on facilitation functions that are perceived

as demanding by facilitators. Finally the data is analyzed and presented for discussion.

1 Introduction

Group Support Systems (GSS) are designed to improve the efficiency and effectiveness of (distributed) group work by offering a variety of tools to assist the group in the structuring of activities, generating ideas, and improving group communications [33]. GSS can reduce the time required for projects. Previous studies on GSS in general have reported labor cost reductions averaging 50 percent and reductions of project calendar days averaging 90 percent [18, 24, 35]. Despite the potential GSS has to provide great benefit to groups, GSS has not diffused widely in organizations [11]. Experience and theory shows that implementing technology alone seldom is the answer to effective and efficient collaboration [10]. Facilitation is one of the key success factors for effective electronic meetings [3, 7, 20].

Facilitation is 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 [14]. Despite the importance of facilitation to the success of GSS applications, most technology developments in the past did not focus on the facilitator [25, 31]. Only recently, is research taking the direction of supporting the facilitator for two potential reasons [4, 5, 8, 27, 28, 31, 38].

First, the facilitator may be a bottleneck for the widespread diffusion of GSS [11]. Factors such as the high cognitive load of GSS, system complexity, corporate politics, and organizational economics make access to competent facilitators difficult [31] and make it tough to keep high-quality facilitators in place [11]. GSS are more likely to be adopted in daily practices when the cognitive load for the facilitator is minimal [11]. Developing support for the facilitator will reduce the cognitive load for facilitators and could, therefore, result in wider adoption of GSS.

Second, distributed GSS are increasingly being used. Distributed work groups and strong interdependencies between distributed organizational actors are increasingly common. Distributed meetings are more difficult than face-to-face meetings for both the participants and the facilitator. Participants in distributed meetings will have greater difficulty at following the

process of the meeting, they will lack non-verbal cues, they have less opportunity for team-building, they will have more trouble managing communication channels, and they have more difficulty converging to a decision [5, 30]. Prior research shows that distributed meetings are difficult for facilitators as well: manual facilitation of distributed meetings is difficult [36]. The loss of the rich face-to-face media, the immediacy of feedback, and the means of coordination diminishes the ability of the facilitator to monitor and control the meetings [9, 36]. Supporting the facilitator in distributed meetings increases the abilities of the facilitator and could, therefore, increase the successful use of GSS in distributed settings.

Given the two reasons above, the requirement to develop effective information systems that support facilitation becomes critical as decision making groups are larger and globally distributed. Developing technologies to support a facilitator is a promising avenue for creating successful distributed GSS use. In this research we focus on developing information technologies to support the facilitator. Other ways to support the facilitator, such as providing guidelines and developing training programs are not addressed. Supporting the facilitator with technologies is addressed frequently in literature. The emphasis is often on the effect of different facilitation situations on group performance rather than on developing supporting technologies for the functions facilitators have to perform. Making the choice of facilitation aspect to support does not seem to be guided by a framework, theory or data. This paper presents an approach into attaining valid information for determining which facilitation functions are most challenging and require support from information technologies. The approach is multi-pronged and is reflected in the structure of this paper. First literature on facilitation functions is reviewed in the second section. Then there is discussion on the design of a questionnaire to collect data from over 300 facilitators around the globe. The research method is presented in the third section. This questionnaire collects information on facilitation functions that are perceived as most demanding by facilitators. The results of which are presented in the fourth section. Finally the data is analyzed and presented for discussion in the fifth section.

2 Background

Facilitation functions have received considerable attention in the literature and there are many lists of facilitation functions. Ackermann distinguishes three stages in a collaboration process: pre-meeting, meeting and post-meeting [2]. In this research the focus is on the meeting stage:

facilitation during the collaboration process. Clawson and Bostrom [12] identified these functions as the functions for which facilitators want to be trained the most. Hayne [25] concludes that the main focus for facilitation control is during the meeting.

Several authors describe tasks or functions a facilitator should carry out. Clawson et al. [14] distinguish between technical facilitation and group process facilitation. Technical facilitation is aimed at assisting the participants with the technology and is often executed by a chauffeur or technographer [20]. Eden [21] divides group process facilitation into process facilitation and content facilitation. 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 overly explored, and time is managed appropriately. Content facilitation deals with analyzing the content of the data and summarizing relevant issues. Some argue that facilitators should not make contributions to the content [23], while others think the roles of process and content facilitation should work together [1, 21]. Dickson et al. [20] distinguish two types of process facilitation: task interventions and interactional interventions. Task interventions are meant to keep the group focused on the task. Interactional interventions focus on the participants and their relations. Niederman et al. [32] show that besides the tasks also skills and qualities of character are of importance: flexibility, good communication skills, and ego-less facilitation appeared to be most important. Schwarz [37] describes a number of ground rules for effective groups. A facilitator has to guard that these ground rules are applied by all participants.

Given the many lists of facilitation tasks, we now want to combine these into one list of facilitation tasks. De Vreede et al. [17] took Clawson and Bostrom's [13] list of dimensions as a starting point and then compared the work of Ackermann [1], Dickson et al. [20], and Niederman et al. [32] in order to identify facilitation tasks or skills that could be added. The list that results from this contains facilitation functions from the perspective of the facilitator. In an other study, de Vreede et al. [16] complements this list with important facilitation functions from the participants' perspective. Although the participants' view on GSS facilitation concurs considerably with the facilitators' own view, the differences are used to complement the list of facilitation functions. One of the interesting differences between the two lists addressed by de Vreede et al. [17] concerns that the aspect time management was very often mentioned by the participants and hardly addressed by the facilitators. Time management is, therefore, added to the list above. Furthermore, de Vreede et al. point out that different functions are important at different phases in the meeting process. Setting the stage was identified as such in many

statements of the participants, and is added to the list. Being available is the third aspect that is added to the list. Although the participants do not mention it frequently, we would like to add this function. In distributed settings, being available as a facilitator is more explicitly addressed and probably important [36]. In synchronous settings, participants simply ask the facilitator questions for clarification and to solve problems. In distributed settings, feedback by the facilitator on non-task related issues is valuable, and depends for example on the availability of a "back channel".

The resulting list of facilitation functions was critically evaluated to include only facilitation functions that have the potential to be supported with information technologies. This resulted in the exclusion of personality aspects such as self-awareness, since personality aspects are extremely challenging to support with tools. Another aspect that is left out for the same reason is 'understands technology and its capabilities'. As we focus on the functions a facilitator carries out during a meeting, functions to design a meeting or take care after the meeting are left out as well. The list of functions that result from this is presented below, with one function added: evaluation and redesign of meeting process. This function was identified by de Vreede et al. [16] and matched with 'demonstrates flexibility' of Clawson and Bostrom [13]. By taking out the personality category, this function would fall outside the scope of our research. To prevent this, we added the function to the meeting procedures category. We, furthermore, added the ground rules of Schwarz [37] to the list. The ground rules have to be authorized and executed by the group with the facilitator. These ground rules aid the facilitator in, for example, atmosphere management and content focus. Since the ground rules focus primarily on how to do certain things we see the ground rules as a qualitative addition to the facilitation functions that primarily focus on what to do as facilitator.

- Atmosphere management
    - Creates and reinforces an open, positive and participative environment
    - Actively builds rapport and relationships
    - Encourages/supports multiple perspectives
    - Manages conflict and negative emotions constructively
- Content focus
    - Promotes ownership and encourages group responsibility

    - Presents information to group
    - Tests agreements among participants
- Meeting procedures – execution
    - Sets the stage
    - Keeps group outcome focused
    - Directs and manages the meeting
    - Manages time
    - Evaluates and redesigns the meeting process
    - Is available
- Technology
    - Select and prepares appropriate technology
    - Creates comfort with and promotes understanding of the technology and technology outputs
- Ground rules
    - Test assumptions
    - Share all relevant information
    - Use specific examples and agree on what important words mean
    - Explain your reasoning and intent
    - Focus on interests, not position
    - Combine advocacy with inquiring
    - Jointly design next steps and ways to test disagreements
    - Discuss undiscussable issues
    - Use a decision-making rule that generates the level of commitment needed

3 Method

Ranking facilitation functions to support with IT is possible from different perspectives. One could look from a technology perspective at the ease with which IT support can be implemented. Or one could look at the facilitation functions that are most critical to the success of collaboration. This can be further divided into satisfaction with process, satisfaction with outcome, time, quality of the outcome, et cetera. Several researchers analyzed the effect of facilitation on the success of collaboration [7, 20, 22, 29]. These studies were mainly focused on the differences between different facilitation modes (with or without facilitation, with content facilitation or with process facilitation, with technical facilitation or group process facilitation) and did not focus on a rank order between facilitation functions. Another way to come up with a rank order is to measure the participants' perception on importance of the facilitation function. De Vreede et al. [17] measured the participants' perception of various facilitation functions and identified three categories of facilitation functions that are perceived as important by participants. The results, however, do not allow the development of a rank order for supporting facilitation functions. Yet another way is to have facilitators indicate the importance of the facilitation functions as Niederman et al. [32] accomplished. Niederman et al., however, focused on personality characteristics of a facilitator and did not take facilitation functions into account. Clawson and Bostrom [12] did analyze the importance of facilitation functions. Their work has focused on face-to-face meetings, while meetings are increasingly distributed. In this research we therefore focus on distributed settings. We will look at how demanding a facilitation function is to perform from the viewpoint of the facilitator. A facilitation function can be demanding for several reasons, including mental effort and time required to execute it. In order to measure facilitators' perspective on the demand rate of facilitation functions we developed a questionnaire. This approach was chosen because it would enable us to involve a broad selection of subjects in the study.

3.1 Questionnaire development

In the questionnaire, facilitators were asked to indicate how demanding they perceive certain facilitation functions. There are indications in the literature that different GSS settings require different facilitation skills (for example: Romano, Briggs et al. [36]). Since we have a strong focus on distributed meetings in our research, three characteristics are important: group size, time, and proximity. These aspects are directly influenced by running a distributed meeting.

- *Group size*. The group size indicates the number of participants that participate in the

group meeting. This can vary from just a few to hundreds of people.

- *Time*. The time characteristic indicates whether the participants provide input to the group meeting at the same time, or at different times.
- *Proximity*. The degree of proximity can vary: from one of the participants at a different location to all participants working apart on several different locations, from small distances between the several locations to globally dispersed groups, and from part of the work being executed while dispersed to all of the work being done while on dispersed locations. To minimize complexity in the questionnaire, we focus on two extremes: all participants in the same place during the entire meeting, and all participants at different locations during the entire meeting. The distance between the locations is too large to use a non-electronic communication device.

The questionnaire consists of four parts. The first part of the questionnaire contains descriptions of each of the facilitation functions and group settings that are used in the questionnaire. These descriptions are based on Clawson et al. [14], de Vreede et al. [16] and Schwartz [37], and can be used as a reference when answering the questions. The second part collects background information from the subjects such as the number of meetings they have facilitated. The third part of the questionnaire focuses on facilitation functions in face-to-face settings, without taking into account aspects such as the group size. The subjects have to indicate how demanding they perceive a facilitation function, on a scale between 1 and 7; a 1 indicates a function that is not overly demanding and a 7 indicates a very demanding function. Finally, the fourth part in the questionnaire focuses on different group settings and pays attention to the influence of these settings on the facilitation functions. For example, the subjects have to indicate whether a larger group size increases or decreases the demand rate of a facilitation function.

Prior to mass distribution of the questionnaire a pilot study was run with thirteen facilitators, six from the USA and seven from the Netherlands. The initial results are reported in [19]. In addition to completing the questionnaire, respondents were asked for any feedback with regard to the questionnaire. Modification was made to the original questionnaire based on the feedback.

3.2 Questionnaire application

The questionnaire was posted on a university website in June 2004. Participants were sought

from personal contacts as well as from communities who were willing to contribute to facilitation research. For example, the International Association of Facilitators is one such community that published the link to the questionnaire on their website. The cooperative attitude of many fellow researchers and facilitators has allowed data collection from over 300 respondents, representing facilitators from over 30 countries in Europe, Asia, Far East, Africa and North America. Data collection was stopped on December 31, 2004.

3.3 Questionnaire analysis

The questionnaire data were analyzed to determine which specific facilitations functions are perceived as demanding. This is stipulated with histograms and the associated mean value. The interpretation is: the higher the grade, the more demanding the function is according to the respondents. The histograms aroused the expectations that some of the histograms were very alike and that this could be caused by a correlation between these facilitation functions.

The correlation between facilitation functions was analyzed for each of the group setting characteristics: face-to-face, size, time and proximity. This was necessary because of the possibilities of different underlying factors per group setting and due to the fact that there are different numbers of respondents per group setting. Factor analysis is used to test whether the facilitation functions correlate to one singular factor [6]. A reliability analysis is performed next to ensure that the grouping of the facilitation functions is legitimate. The results from these analyses imply that there are multiple underlying factors. For the further publishing of the results the correlated facilitation functions will be grouped in the underlying factors, see appendix. It should be noted that the identified factors are different per group setting.

A final analysis that has been carried out is to test whether there is a relation between the background information of the facilitators and their perception on how demanding the facilitation functions are. Multiple regression analysis was used. The multiple regression analysis checks whether the independent variables are correlated or not [15]. Then the effect of every predictor on the dependent variable is stipulated while the other predictors are kept constant. The regression analysis checks this for all the background variables and corrects the correlation between the independent variables.

4 Results

There are 306 facilitators that filled in the questionnaire, but the results are based on 275 respondents. Thirty-one facilitators answered only the background questions and were, therefore, excluded from our analysis. The facilitators are quite diverse. It can be noticed that a lot of the respondents come from North America: 190 facilitators live in North America, only 46 in Europe, 16 in Asia, 11 in Australia and 12 in Africa. In this group of respondents, 114 respondents are male and 161 respondents are female. There are 71 facilitators that do not have experience with electronic meetings. 59 Of the facilitators can be categorized as inexperienced with having facilitated less than five electronic sessions. 44 Facilitators have little experience with less than 20 sessions on their name. There are 46 facilitators that count as very experienced with far more than 50 sessions facilitated by them. There are more than 50 different tools identified which are used by the facilitators. The tools range from non-electronic tools, like whiteboards and paper, to electronic tools like text editors and specific groupware. Because of the diversity of tools it is not possible to draw any conclusions with regard to the tools.

First, the results with regard to the demand rate in face-to-face settings are presented. The respondents indicated for each facilitation function how demanding this function on a scale between 1 and 7; a 1 indicates a function that is not overly demanding, and a 7 indicates a very demanding function. The results of this are presented in table 1.

It can be noticed that the demand rate of the facilitation functions do not differ that much from each other. Most functions score around 4.5. However, there are some exceptions such as Factor 5 “managing conflicts and negative emotions constructively”, which is perceived as more demanding than the other functions (5,5). Also factors 6 “presenting information and testing agreement among participants”, factor 8 “setting the stage” and factor 11 “being available”, are seen as less demanding functions with an average of 3,3. For the remaining functions it can be said that these are all perceived as slightly demanding as they score slightly higher than the middle value 4.0 for the range 1 to 7.

Table 1: Demand rate for facilitation functions in face-to-face settings

Function		Mean	Std
Atmosphere management			
Factor 1	Creating and reinforcing a open, positive and participative environment	4,6	1,62
Factor 2	Actively build rapport with members	4,2	1,64

Function		Mean	Std
Factor 3	Actively build cooperative relationships among members	4,9	1,46
Factor 4	Encourage multiple perspectives	4,6	1,57
Factor 5	Manage conflicts and negative emotions constructively	5,5	1,46
Content Focus			
Factor 6	Present information and test agreement among participants	3,3	1,50
Factor 7	Promote ownership and encourage group responsibility	4,7	1,55
Meeting procedures – execution			
Factor 8	Set the stage	3,3	1,73
Factor 9	Keep the group outcome focused	4,5	1,59
Factor 10	To manage and improve the meeting process	4,1	1,61
Factor 11	Be available	3,3	1,80
Technology			
Factor 12	To explain the tools	3,9	1,58
Ground rules			
Factor 13	To discuss the discussion points and promote consensus	4,5	1,43
Factor 14	To promote the solidarity of the group through univocal information	4,1	1,55
Factor 15	Assist group participants with focusing on interests vice positions	4,6	1,45
Factor 16	Help jointly design next steps	4,2	1,55
Factor 17	Use a decision-making rule that generates the level of commitment	4,6	1,57

Second, the influence of the group size on the demand rate of the facilitation functions is examined. If a larger group increases the demand rate, this is indicated with a number between 5 and 7. Rate 5 stands for a slight increase and 7 for a huge increase. If a larger group decreases the demand rate, this is indicated with a number between 1 and 3 where rate 1 stands for a huge decrease and rate 3 for a slight decrease. And if the demand rate is not influenced by the group size, this is indicated with a 4. From the 275 respondents, there are 247 respondents who have filled in this question part entirely. The results are presented in table 2.

There is no clear distinction in the demand rate of different facilitation functions, except for factor 21 “presenting information before and during the meeting”, which has a mean of 4,0. This can be interpreted as that the demand rate for this function is not influenced by the group size.

Table 2: Influence of group size on demand rate of facilitation functions

Function		Mean	Std
Atmosphere management			
Factor 1	Create and reinforce an open, positive and participative environment	5,6	1,48
Factor 2	Actively build rapport with members	5,7	1,37
Factor 3	Actively build cooperative relationships among members	5,4	1,50
Factor 4	Encourage multiple perspectives	4,6	1,77
Factor 5	Manage conflicts and negative emotions constructively	5,7	1,42
Content focus			
Factor 6	Promote ownership and encourage group responsibility	5,5	1,36
Factor 7	Test agreements among participants	5,2	1,43
Meeting procedures – execution			
Factor 8	Manage the meeting process	5,5	1,50
Factor 9	Keep group outcome focused	5,4	1,44
Factor 10	Evaluate the meeting process	4,7	1,29
Factor 11	Redesign the meeting process	5,0	1,39
Factor 12	Be available	4,9	1,48
Technology			
Factor 13	Use the right tools	4,5	1,36
Factor 14	Make the tool user-friendly	5,0	1,19
Ground rules			
Factor 15	Get clarification on concepts and statements	5,1	1,38
Factor 16	Discuss the discussion points and promote consensus	5,3	1,39
Factor 17	Work with participants to test assumptions	5,4	1,14
Factor 18	Create an environment to share all relevant information	5,2	1,38
Factor 19	Assist group participants with focusing on interest vice positions	5,5	1,31

Function		Mean	Std
Factor 20	Help jointly design next steps	5,4	1,32
Other			
Factor 21	Present information before and during the meeting	4,0	1,43

Third, the results of the influence of the time aspect on the demand rate of the facilitation functions are examined. The same measurements are used as for the influence of group size: demand rate 1 to 7, where rate 1 to 3 indicates that an asynchronous setting is less demanding than a synchronous setting, rate 4 indicates that the time characteristic does not influence the demand, and rate 5 to 7 indicates that an asynchronous setting is more demanding than a synchronous setting. The results are presented in table 3. Out of the 275 respondents, 178 respondents answered the questions related to the time aspects. The other facilitators indicated to have too little experience in these situations to answer the questions. With regard to the time aspect, all functions are considered to be slightly more demanding in an asynchronous setting as compared to a synchronous setting, with a mean score mostly between 4,5 and 5. The most demanding function is Factor 1 “stimulating a constructive meeting” with a mean of 5,4.

Table 3: Influence of time aspect on demand rate of facilitation functions

Function		Mean	Std
Atmosphere management			
Factor 1	To stimulate a constructive meeting	5,4	1,64
Factor 2	Encourage multiple perspectives	4,1	1,79
Factor 3	Manage conflicts and negative emotions constructively	5,1	1,76
Content focus			
Factor 4	Promote ownership and encourage group responsibility	5,2	1,50
Factor 5	Present information to the group	4,3	1,55
Factor 6	Test agreement among participants	4,8	1,72
Meeting procedures – execution			
Factor 7	To manage the meeting process	4,7	1,81
Factor 8	Set the stage	4,5	1,43
Factor 9	Keep the group outcome focused	4,9	1,60

Function		Mean	Std
Factor 10	Be available	4,4	1,77
Technology			
Factor 11	To explain the tools	4,5	1,51
Ground rules			
Factor 12	Get clarification on concepts and statements	4,6	1,62
Factor 13	To assist group participants to combine inquiry with their interests vice positions	4,9	1,56
Factor 14	Work with participants to test assumptions	4,9	1,56
Factor 15	Create an environment to share all relevant information	4,9	1,53
Other			
Factor 16	To adapt the meeting process if necessary and stimulate the workgroup in discussing disagreements	4,8	1,51

Finally, we looked at the influence of the proximity aspect on the demand rate of the facilitation functions, shown in table 4. We used the same measurements as for the influence of group size and of time (Range 1 to 7). Out of the 275 respondents, 152 respondents answered the questions related to the proximity aspects. The other facilitators indicated to have too little experience in these situations to answer this part of the questionnaire. With regard to the proximity aspect, you can see that the demand rate of the facilitation functions increases more in a distributed setting than in a co-located setting. Without having contact with the participants, it is perceived to be more demanding to perform the functions.

Table 4: Influence of proximity aspect on demand rate of facilitation functions

Function		Mean	Std
Atmosphere management			
Factor 1	To stimulate a constructive meeting	5,8	1,37
Factor 2	Encourage multiple perspectives	5,0	1,44
Factor 3	Manage conflicts and negative emotions constructively	5,7	1,51
Content focus			
Factor 4	Promote ownership and encourage group responsibility	5,5	1,44

Function		Mean	Std
Factor 5	Present information to the group	4,6	1,40
Factor 6	Test agreements among participants	5,1	1,43
Meeting procedures – execution			
Factor 7	Set the stage	4,7	1,37
Factor 8	Keep group outcome focused	5,2	1,46
Factor 9	Manage the meeting	5,4	1,44
Factor 10	Manage time	5,1	1,42
Factor 11	Evaluate the meeting process	4,9	1,20
Factor 12	Redesign the meeting process	5,0	1,43
Factor 13	Be available	5,0	1,64
Technology			
Factor 14	Select appropriate tools	4,7	1,30
Factor 15	Prepare and select appropriate tools	4,8	1,33
Factor 16	Create comfort with and promote understanding of the tools and tool outputs	5,2	1,37
Ground rules			
Factor 17	Help group to discuss concepts and statements and focus on interests vice positions	5,1	1,35
Factor 18	Work with participants to test assumptions	5,2	1,38
Factor 19	Create an environment to share all relevant information	5,3	1,38
Factor 20	Help jointly design next steps	5,2	1,38
Factor 21	Help design ways to test disagreements	5,2	1,40
Factor 22	Assist the group members with discussing undiscussable issues	5,5	1,64
Factor 23	Use a decision-making rule that generates the level of commitment needed	5,0	1,51

With regard to all tables, it can be said that the facilitation functions are rated higher for the question schemes proximity and size. This is notable because the expectation is that the time aspect and the proximity aspect are somehow related. If the meeting is held in an asynchronous

setting this usually means that the meeting was held in a distributed setting. But if the meeting is held in a distributed setting this does not necessarily imply that the meeting is held in an asynchronous setting. Therefore, we expected the demand rate of the facilitation functions for the time aspect would be perceived at least just as demanding as the proximity aspect. This is not the case. It could be the case that facilitators perceive the asynchronous setting as less demanding because their attention does not have to be divided over several persons simultaneously which would results in less energy to be spend on “Atmosphere management” functions.

Outstanding results are that “Atmosphere management” has the highest ratings for all the question schemes and that “Technology” usually has the lowest ratings for all the question schemes.

Once the demand rates for different facilitation functions were known, tests were made to determine if there is a relation between the background information of the facilitators and their perception on the demand rate of different facilitation functions. A number of aspects were looked at such as experience in facilitation, experience in facilitating electronic meetings, gender and types of meetings facilitated. There does not seem to be a significant difference between groups of facilitators, except for facilitators on different continents. With regard to the results “Comparison between the continents”, it should be noted that in order to make clearly, founded statements more research is necessary, since the number of respondents over the continents is not evenly distributed. The results of the comparison over continents are presented in table 5. The table shows that the Asian people have graded all the functions higher than the other continents. This means that Asian people find the facilitation functions more difficult than other people. Australian facilitators have graded the functions lower than the rest of the continents. This lower rating from the Australians is probably caused by the fact that 8 out of the 11 Australian facilitators have more than 10 years of experience.

Table 5: Mean demand rate face to face-settings for different continents

Factor	N. America	Europe	Asia	Australia	Africa
	Mean	Mean	Mean	Mean	Mean
Atmosphere Management					
Factor 1	4,6	4,5	5,3	3,8	4,7

Factor 2	4,1	4,2	5,1	3,5	4,0
Factor 3	4,9	4,8	5,3	4,4	4,3
Factor 4	4,7	4,5	5,3	3,8	4,3
Factor 5	5,5	5,2	6,1	5,1	5,0
Content Focus					
Factor 6	3,2	3,4	3,9	3,0	2,9
Factor 7	4,7	4,7	5,4	4,2	4,5
Meeting procedures – execution					
Factor 8	3,1	3,5	4,1	2,5	4,0
Factor 9	4,6	4,6	4,9	3,6	4,3
Factor 10	4,0	4,2	4,4	3,2	4,0
Factor 11	3,1	3,8	4,0	2,6	3,8
Technology					
Factor 12	3,8	4,0	4,7	3,8	3,6
Ground rules					
Factor 13	4,1	4,0	4,6	3,4	4,2
Factor 14	4,7	4,5	4,7	4,0	4,4
Factor 15	5,0	4,8	5,2	4,4	4,4
Factor 16	4,2	4,2	5,3	3,3	3,4
Factor 17	4,5	4,6	5,2	3,9	4,4

5 Discussion and conclusion

The results of the questionnaire are now discussed for their value into identifying facilitation functions to support with IT tools. First, all facilitation functions are considered to be demanding. The development of information systems to support facilitation functions seems to be justified. There are hardly any differences between the demand rates of different facilitation functions. Facilitation functions dealing with atmosphere management are considered the most demanding and facilitation functions dealing with technology are considered the least demanding. Especially the latter supports the belief that facilitators are able to handle IT tools to support themselves or the group achieving its outcome. Furthermore, one may conclude from

this that facilitators might be most helped with tools that support them in atmosphere management. This, however, is a very difficult aspect to support since the atmosphere in a group meeting is usually not made explicit. But even developing tools to support other facilitation functions, helps facilitators in atmosphere management: by using the tools, the facilitator needs less cognitive resources for those facilitation functions that are supported by the tools and, therefore, has more cognitive resources available for atmosphere management.

Another result from analyzing the questionnaire that we would like to stress here is the lack of dependence between, for example, level of experience and demand rate of facilitation functions. Although at first glance this might appear to be odd, it may not be a strange result. Facilitators were asked to indicate how demanding they perceive a certain function now. Experienced facilitators perceive facilitation functions as “demanding.” They may well perceive them less demanding now than when they were less experienced, but that was not part of the question. IT support tools have added value for all kinds of facilitators and we do not have to distinguish between facilitators in the development of the IT tools.

Some things that the questionnaire did not allow us to analyze are taken for further research. One of these aspects is that we were not able to distinguish between facilitators using different tools. It would be interesting to know whether people using a specific tool perceive certain facilitation functions as less demanding than others.

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Appendix: Correlations between facilitation functions

The tables below show which questions are grouped in which underlying factors. To clarify these factors a label has been given to them. For the function numbers we refer to the end of this appendix.

The clustered variables: the Factors for Face

Factor	Function	Label
Factor 1	1 2	Creating and reinforcing a open, positive and participative environment
Factor 2	3	Actively build rapport with members
Factor 3	4	Actively build cooperative relationships among members
Factor 4	5	Encourage multiple perspectives
Factor 5	6	Manage conflicts and negative emotions constructively
Factor 6	8 9	Present information and test agreement among participants
Factor 7	7	Promote ownership and encourage group responsibility
Factor 8	10	Set the stage
Factor 9	11	Keep the group outcome focused
Factor 10	12 13 14 15	To manage and improve the meeting process
Factor 11	16	Be available
Factor 12	17 18 19	To explain the tools
Factor 13	20 21	To promote the solidarity of the group through univocal information

Factor	Function	Label
	22 23 24	
Factor 14	25	Assist group participants with focusing on interests vice positions
Factor 15	26 28 29	To discuss the discussion points and promote consensus
Factor 16	27	Help jointly design next steps
Factor 17	30	Use a decision-making rule that generates the level of commitment

The clustered variables: the Factors for Size

Factor	Function	Label
Factor 1	1 2	Create and reinforce an open, positive and participative environment
Factor 2	3	Actively build rapport with members
Factor 3	4	Actively build cooperative relationships among members
Factor 4	5	Encourage multiple perspectives
Factor 5	6	Manage conflicts and negative emotions constructively
Factor 6	7	Promote ownership and encourage group responsibility
Factor 7	9	Test agreements among participants
Factor 8	11	Keep group outcome focused
Factor 9	12 13	Manage the meeting process
Factor 10	14	Evaluate the meeting process
Factor 11	15	Redesign the meeting process
Factor 12	16	Be available
Factor 13	17 18	Use the right tools
Factor 14	19	Make the tool user-friendly

Factor	Function	Label
Factor 15	20	Work with participants to test assumptions
Factor 16	21	Create an environment to share all relevant information
Factor 17	22 23 24	Get clarification on concepts and statements
Factor 18	25	Assist group participants with focusing on interest vice positions
Factor 19	26	Help jointly design next steps
Factor 20	27 28 29 30	Discuss the discussion points and promote consensus
Factor 21	8 10	Present information before and during the meeting

The clustered variables: the Factors for Time

Factor	Function	Label
Factor 1	1 2 3 4	To stimulate a constructive meeting
Factor 2	5	Encourage multiple perspectives
Factor 3	6	Manage conflicts and negative emotions constructively
Factor 4	7	Promote ownership and encourage group responsibility
Factor 5	8	Present information to the group
Factor 6	9	Test agreement among participants
Factor 7	10	Set the stage
Factor 8	11	Keep the group outcome focused
Factor 9	12 13	To manage the meeting process

Factor	Function	Label
Factor 10	16	Be available
Factor 11	17 18 19	To explain the tools
Factor 12	20	Work with participants to test assumptions
Factor 13	21	Create an environment to share all relevant information
Factor 14	22 23 24	Get clarification on concepts and statements
Factor 15	25 26	To assist group participants to combine inquiry with their interests vice positions
Factor 16	14 15 27 28 29 30	Adapt the meeting process if necessary and stimulate the workgroup in discussing disagreements

The clustered variables: the Factors for Place

Factor	Function	Label
Factor 1	1 2 3 4	To stimulate a constructive meeting
Factor 2	5	Encourage multiple perspectives
Factor 3	6	Manage conflicts and negative emotions constructively
Factor 4	7	Promote ownership and encourage group responsibility
Factor 5	8	Present information to the group
Factor 6	9	Test agreements among participants
Factor 7	10	Set the stage

Factor	Function	Label
Factor 8	11	Keep group outcome focused
Factor 9	12	Manage the meeting
Factor 10	13	Manage time
Factor 11	14	Evaluate the meeting process
Factor 12	15	Redesign the meeting process
Factor 13	16	Be available
Factor 14	17	Select appropriate tools
Factor 15	18	Prepare and select appropriate tools
Factor 16	19	Create comfort with and promote understanding of the tools and tool outputs
Factor 17	20	Work with participants to test assumptions
Factor 18	21	Create an environment to share all relevant information
Factor 19	27	Help jointly design next steps
Factor 20	28	Help design ways to test disagreements
Factor 21	29	Assist the group members with discussing undiscussable issues
Factor 22	30	Use a decision-making rule that generates the level of commitment needed
Factor 23	22 23 24 25 26	Help group to discuss concepts and statements and focus on interests vice positions

Overview of facilitation functions

1. Create and maintain an open, positive, and participative environment
2. Reinforce an open, positive, and participative environment
3. Actively build rapport with members
4. Actively build cooperative relationships among members
5. Encourage multiple perspectives

6. Manage conflicts and negative emotions constructively
7. Promote ownership and encourage group responsibility
8. Present information to the group
9. Test agreements among participants
10. Set the stage
11. Keep group outcome focused
12. Manage the meeting
13. Manage time
14. Evaluate the meeting process
15. Redesign the meeting process
16. Be available
17. Select appropriate tools
18. Prepare and support appropriate tools
19. Create comfort with and promote understanding of the tools and tool outputs
20. Work with participants to test assumptions
21. Create an environment to share all relevant information
22. Ask meeting participants to use specific examples to clarify concepts
23. Work with meeting participants to agree on what important words mean
24. Get participants to explain reasoning behind statements
25. Assist group participants with focusing on interests vice positions
26. Help participants combine advocacy with inquiry
27. Help jointly design next steps
28. Help design ways to test disagreements
29. Assist the group members with discussing undiscussable issues
30. Use a decision-making rule that generates the level of commitment needed