

## Role Separation in Strategies for Collaboration Support

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### Abstract

*Collaboration support consists of process and (optionally) technology support. For these two types of support we can distinguish a design task (to design the process and the technology), an application task (to apply the process and to use the technology) and a management task (to manage the implementation and control of the process and to manage the maintenance of the technology). In our interviews we found that in many organizations only one role is distinguished for collaboration support; a facilitator. The facilitator often does the design and execution of the collaboration process and in many cases also takes care of the project management (e.g. acquisition of sessions, management of facilitation team and business administration) and technology application (operating the technology). External roles are often the design of the technology and the maintenance of the technology (hardware & software maintenance).*

### 1. Introduction

Groups might not be able to overcome the challenges of collaboration by themselves [26, 29]. Even if groups are able to accomplish their goals, they can often collaborate more efficiently and effectively using collaboration support [14, 29]. Collaboration support can be comprised by tools, processes and services that support groups in their joint effort. In knowledge oriented organizations, there is often a need or demand for collaboration support. Collaboration support can be offered by stimulation of increased effort, or by better focusing or directing effort [3]. Collaboration support can be offered in different shapes, such as facilitation, training and tools or technology. Tools and technology for group support exist in a variety of shapes from complex computer systems (groupware) and Group Support Systems, to simple boxes with cards and

pencils. Each of these tools can be used by the group to be more successful in sharing their ideas and indicating relations and preferences. However, many tools, especially GSS are not intuitive enough to make sense to groups without any instruction on how to use them. Like in other flow oriented problems, an important part of the solution to move from input to output is process support [23]. Therefore, tools and technology, GSS are often combined with instruction, training or facilitation [10].

Training for collaboration support can focus on the use of collaboration support tools and technology or on behavioral aspects of collaboration. Tool use training can address collaboration support at several levels. It can address the technology directly, particularly for the first time user, in terms of how to operate the system's hardware and software. However, from the perspective of the facilitator, additional training is necessary to understand the capabilities and limits of each function, how to move to and from each function, and how to match technical functions with process and task demands and opportunities. Training that is focused on behavioral aspects, can help teams by improving their communication skills and can teach them methods to overcome conflict. However, training would only be valuable if the trained teams were to collaborate on a frequent basis, and even then, it is costly to train all team members. Training is often focused on changing the behavior of collaborators. For instance, Schwarz offers a set of rules that instruct people to share information and to reduce the chance of personal conflict [29]. Although these approaches are likely to increase the effectiveness of the group's processes, they are not specifically designed to support the group in accomplishing its goal. For this, specific methods for group work such as brainstorming and discussion techniques can be used. There

are many such techniques and it would be very expensive to train teams in applying all these techniques and differentiating when to use which for varied tasks.

As described, many interdisciplinary teams require collaboration processes. If the composition of those teams changes frequently, the entire organization should be trained in collaborative skills in order to support each team configuration. Therefore, to offer goal-focused collaboration support, facilitation, (in the form of professional customized collaboration process support) is often more cost effective. Professional facilitation requires complex skills and experience to support a group. Becoming a professional facilitator requires extensive training and experience, especially when they use GSS to support groups. Good facilitators are likely to be expensive. If an organization wants to obtain the benefits of a facilitator (possibly in combination with GSS) they can choose to either hire an external facilitator or employ or train an internal facilitator.

Internal facilitation support is difficult to sustain; field studies describe that GSS are depend on a champion facilitator; once such person is gone, the knowledge they have accumulated disappears, [24, 27].

It is also difficult to create a business case for GSS and facilitation support implementation in an organization [2, 6]. Although the added value is often substantial [14, 31], it can be difficult to predict and document this added value. Furthermore the added value can often come in the form of a difficult to quantify cost saving or it can provide a reduced risk of process failure rather than appear as a more clearly measurable generation of new revenue. Such added value can be difficult to allocate directly as a function of collaboration support. Collaboration often contributes to important managerial and decision making processes in the organization, rather than to key production process. This makes it easier to eliminate such facilities in a budget crunch [2, 6].

As it is difficult enough in organizations to schedule a group meeting, a facilitator should be available, and thus it is hard to be "part-time" facilitator or to combine the function with another function. This requires the allocation of a full-time professional for this task. A facilitator is likely to become more experienced when he encounters a broader range of groups and tasks, for which the

possibilities within a single organization might be limited. This might cause facilitators to leave, in which case the investment in training may not be fully repaid. Finally, one of the important characteristics of a facilitator is an expectation of neutrality [13, 25]. For a member of the organization, it will be more difficult to be objective than for an outsider.

External facilitators would offer a solution for one-off ad-hoc tasks, however, in general and especially for recurring collaborative tasks, there are a number of substantial barriers to hiring external facilitation. First of all, additional costs are added to the project. When used for a recurring task, these costs could mount up. Next, the budget for collaborative tasks does not always include an external facilitator or collaboration support, and obtaining such a budget often requires bureaucratic procedures. Furthermore, confidentiality might prohibit a group from involving external parties in the collaborative task. This adds to the barrier of hiring an external facilitator. Therefore, organizations are unlikely to hire external facilitators to support recurring collaboration processes that could benefit from such collaboration support.

This can make it difficult for organizations to provide their teams and groups with affordable and accessible qualitative collaboration support to help them accomplish their goals efficiently and effectively. This is especially the case for recurring tasks.

Collaboration Engineering is an approach to creating sustained collaboration support by designing collaborative work practices for high-value recurring tasks, and deploying those as collaboration process prescriptions for practitioners to execute for themselves without ongoing support from professionals [7]. In Collaboration Engineering the tasks are divided among several roles which enables more outsourcing and dividing the workload of collaboration support [19]. In this paper we will explore this task separation by reporting the results of interviews with collaboration facilitators to explore the effects of task separation on the success of collaboration support.

## 2. Background

In order to understand the roles in collaboration support, we find it useful to distinguish a design-deployment and a process-technical dimension for defining roles played by GSS facilitators. In deployment we see two

different tasks, the application of collaboration support and the management of collaboration support. For the sake of simplicity, we have named the quadrants created in this approach technical design, process design, technical application, process application, and technical management, and process management (See fig. 1) In keeping with the concept of roles as distinct from individuals, any given facilitator may play one or more roles either simultaneously or consecutively. This is consistent with findings of [21] regarding end user computing roles in organizational intranet systems.

Technology	Technical Design	Technical Application	Technical Management
	Process Design	Process Application	Process Management
Process	design		deployment

Figure.1 Roles in Collaboration Support

**2.1 Design**

The *process designer* designs and prepares the meeting process. We call this person a Collaboration Engineer. The design of collaboration processes is the most difficult and critical task of a facilitator [8, 9, 26], and, while a good design is not a guarantee for success, a poor design can be a major cause of unsuccessful collaboration [17, 26, 30]. The *technology designer* is the role with responsibility for creating new GSS software technology.

**2.2 Deployment: Application**

*Process application* involves all leadership tasks designed to aid groups or teams move through a series of collaborative activities that comprise their process. This is the task most associated with the term ‘facilitation’. A facilitator gives instructions that guide the group members in their activities and help them focus on task outcomes. Facilitators typically rely on their skills to adapt the meeting design to emerging situations [17]. This complex skill is difficult to learn and transfer. Training and apprenticeship have been reported to take 2 months or more and becoming an experienced independent facilitator could take up to 2 years [27]. The need for an experienced facilitator is therefore

a large barrier in the adoption of collaboration support, especially in combination with the adoption of GSS. *Technical application* involves preparing and operating the technology including configuration, and assembling the meeting facilities. Specialists playing this role are often called a technographer or a chauffeur [11].

**2.3 Deployment: Management**

The *management of technology* involves tasks related to the maintenance of hardware and software [33]. While this task may be combined with general systems operation, and becomes more dispersed if collaboration technology is available online and maintained by the vendor, or in a distributed setting, in face to face collaborative settings with technology support maintenance of the facility remains an important task. *Process management* of collaboration support concerns the acquisition of tasks that require support, financial administration and agenda management of the facility and the people involved design and application. Several studies report the existence of a champion, as a success factor for implementation of collaboration support [24, 27].

In our interviews we will examine whether these represent a distinct set of facilitator roles and, if so, how they are combined, and whether these combinations are successful.

**3. Method**

To compare the roles distinguished for group support in the organization with the way collaboration support is implemented in the organization and its successfulness we interviewed 18 people that worked a significant part of their time to support groups. The interviews were held between March and September 2006. We found the respondents mostly through the search of users of GSS in our own networks, and furthermore we asked some of the respondents to suggest other respondents. Most of the respondents worked in the Netherlands, 2 worked in the United States of America. For the interviews we used an interview protocol which was based on the role separation model described in the background. The interview protocol was approved by the Saint Louis University Institutional Review Board.

We asked the respondents the tasks they performed with respect to collaboration support and the use of GSS, and about the task variation they used when supporting groups.

Next we asked the participants which of the following roles they fulfilled:

*Internal technical designer* = design group support technology that is used in the organization where you work

*External technical designer* = design group support technology that is used in other organizations than the organization where you work

*Internal facilitator* = offer process support for groups in the organization where you work  
*Practitioner* (internal facilitator for single recurring process)  
*Internal all-round facilitator* (for ad-hoc tasks)

*External facilitator* = offer process support for groups outside the organization where you work  
*External Practitioner* (facilitator for single recurring process)  
*External all-round facilitator* (for ad-hoc tasks)

*Collaboration engineer* (external process designer) = design processes that you transfer to practitioners or facilitators

*Group chauffeur / technographer* = operates technology for a group but does not offer process support

Furthermore we asked them about the level of success of their efforts in supporting group, and the role of the organizational setting and the technology used in this success. The interviews were recorded and transcribed. Interview transcripts included both numerical and textual data. For several questions we classified and counted the responses to generalize the results. For other questions we could calculate and average the group result.

#### 4. Results

In our interviews with facilitators we identified the different tasks they performed and asked them to classify their roles. Besides the tasks they performed we also asked them whether they offered collaboration support in their own organization or externally. The results are listed in Table 1. We found only one respondent that indicated that he/she most often performed the role of collaboration engineer, however, this person indicated that he/she advised processes for others but did not design them for others, designing processes for others to execute. Half of the respondents (9) identified themselves as external facilitators.

Four of them mostly did the technical facilitation. Interesting is that all these chauffeurs indicated that they often offered advice to other facilitators on the design of the process. We found two internal facilitators and one external practitioner, a person that ran collaboration processes for groups outside the organization based on process designs made by others. However, this one practitioner did not run just one recurring process, and also advised others in the design of collaboration processes. Therefore we conclude that the practice of Collaboration Engineering is not really found in the practice, at least not in relation to GSS supported processes. While facilitators counsel each other and their apprentices or novices, they do not often design processes for each other, and if they do this is mostly in emergency situation or in situations where a standard process is run by multiple facilitators or where facilitators work with a team to facilitate a large group. Of the respondents, 77 percent perform 2 roles, and 44 percent indicated that they performed 3 or more roles. Some organizations split the role of process and technology execution. Almost none split the role of design and execution. A majority of the facilitators supports external groups.

Question	total yes	total no	total other
use GSS?	94.4	5.6	-
operate GSS?	38.9	0.0	50.0
design GSS	0.0	88.9	-
design processes	88.9	0.0	5.6
use process design from others	47.1	52.9	-
design for others	38.9	5.6	55.6*
role designer	22.2	77.8	-
role internal fac	38.9	61.1	-
role internal prac	16.7	83.3	-
role external fac	55.6	44.4	-
role external prac	16.7	83.3	-
role chauffeur	61.1	38.9	-
role coll eng	50.0	50.0	-
Question	external	internal	both
support internal/ external groups	66.7	11.1	22.2

**Table 1. role analysis in facilitated GSS use**  
**\* I advice other about their process design.**

Out of our 18 facilitators, only 7 considered the *organization* of collaboration support, their own role and the supporting technology in their organization successful. All of these facilitators focused on supporting external groups, outside their organization. The challenges that were reported with respect to organizational issues were:

- The administrative organization, acquisition of sessions, allocation of facilitators and financial compensation are not arranged well, and the management does not understand the added value of collaboration support

“Yes, I am responsible for the system and its profitability, that is how it’s organized”

“We could improve the use of the system by being more independent, some project leaders are scared to lose their project to us. Furthermore, our service costs money to other departments, while other services are exchanged for free, that is a barrier. It would be better if we were located at a different place in the organization.”

- Facilitators do not get enough time allocated to perform their role and to maintain their skills

- “We have to fight for our position, I succeeded and I get some recognition but I’m now ‘allowed to facilitate’, it’s not like they are thrilled.”

“For the role I don’t have enough time & human resources to do facilitation and that is a large part of the problem.”

- The technology is out-dated or the amount and quality of workstations could be improved

“I would like new and more computers”  
 “Purely the technology I would like more equipment I would like some extra rooms”

- The knowledge about facilitation is scattered in the organization

“One disadvantage is when I go I need to transfer the task really well. I’m working on that now.”

“It’s difficult to free people for this task, the fact is that there was support behind this, they did something about quality, but now nothing happens, we have a network based on the old situation, so I think we can hold on for a few more months, but then it will fall apart, and then we have facilitators in the organization that know each other and nothing will be organized, and then it stops.”

“No, there is no leader, upper level, the knowledge about collaboration engineering is too much divided, there is too little focus and

coherence in the discipline; we need a critical mass of personnel.”

Facilitators in organizations thus have multiple tasks, including management tasks, while they often get limited time to execute these tasks. Consequently, many facilitators do not consider the setting in which the GSS and their role to be organized successfully. Based on these findings we can conclude that there is a need for new approaches to collaboration support. In the next section we present several strategies in which role separation is used to increase the likelihood of successful deployment of collaboration support.

## 5. Sustainable collaboration support, strategies and solutions

While the potential benefits of GSS and facilitation are clear, it remains something viewed as “extra”. Like board rooms and other luxurious facilities available only for high value tasks rather than regular meetings or collaborative tasks. To offer new facilitation support there are two possible roads to success; eliminating the need for the distinct role of process leader or facilitator, and task separation for the facilitation or process leader role to enable new strategies for the implementation of collaboration support.

### 5.1 Removing the facilitation role

There are two (combinable) solutions to offer collaboration support that help to run collaboration processes without facilitation support; offering tools that are more self-explanatory and easier to use or making facilitation skills more transferable.

### 5.2 Easy to use, self explanatory tools

With respect to the tools available we have identified two challenges; accessing hardware and software and addressing the complexity of GSS suites and tools. With respect to access, a trend has evolved to offer software online with the idea that people can collaborate from their desk. However, the challenges of distributed facilitation bring in new problems, and thus offering tools online is not a ready solution to the challenge. Some directions to overcome the challenges of distributed collaboration have been identified and solutions have been offered [28]. Gathering input from individuals (comments, brainstorming, voting) is relatively easy in a distributed session, but can also be supported with (web) surveying tools, e-mail and discussion forums. However especially the tools that support joint efforts such as convergence, discussion, consensus building and joint modeling are more complex and

require facilitation support. Using these tools in a distributed setting will require training and facilitation expertise. The idea that participants bring their own laptop with Internet access to a face-to-face meeting is still a future scenario for most groups due to security issues, less than universal wireless access, and sub-optimal wireless network speeds.

With respect to addressing complexity of tools there are two main possibilities: reducing the complexity or adding “facilitation” to aid group members in coping with such complexity. Restriction in the technology can offer groups the means to further structure their collaborative task. Restriction is not the same as removing complex tools, but rather limiting access to some of the functionality when addressing a particular task. After selecting a particular task, a subset of capabilities, alternatives, and sequencing of procedure can be pre-programmed. Of course, this may still require some expertise in (1) anticipating the types of tasks that might be relevant to the group; (2) inventing or discovering preferred functionality subsets and pathways through activities; and (3) group recognition of the particular task that it is about to engage in. Alternatively, an approach is to code ‘facilitation’ into the more general set of GSS tools. Limayem [22] has studied the conscious effort to embed facilitation into GSS technology for this purpose. His study, within a laboratory environment, generally supports the hypotheses that under particular conditions automated “facilitation” can produce the same outcomes as human facilitation, however, the robustness of this strategy across a wide range of groups, tasks, and other conditions would need to be tested.

### 5.3 Transferability of facilitation skills

Transferability of facilitation skills can be supported with the use of thinkLets. The thinkLet concept was invented in 2001 by Briggs and de Vreede [4, 5]. In this concept thinkLets were presented as a combination of a specific tool, its configuration and a script to use it. The documentation of a thinkLet was tool specific; it was a description on how to use GroupSystems™ software and contained instructions on when to choose the thinkLet, what to prepare, what to do, what to say, and a section with insights, a success story and an explanation of the mnemonic behind the thinkLet name. Over 70 thinkLets were documented in this style and they have been used since. With the search on patterns in the use of thinkLets insights were derived that led to a conceptualization that was more tool

independent, had several levels of hierarchy and was based on the pattern concept [15, 16, 18, 32]. A thinkLet is the smallest unit of intellectual capital to create a pattern of collaboration [6]. The thinkLet concept is based on design patterns and parameterized action representation to offer a transferable, reusable and predictable building block for the design of a collaboration process [18, 20, 32]. A large number of facilitators, students and practitioners have been trained to use thinkLets in collaborative efforts. ThinkLets are easy to learn because their documentation is structured to contain the essential information (parsimony) thus limiting their complexity (cognitive load) to a minimum. Furthermore they have mnemonics to make it easier to memorize them and to use them as a shared language in communities of practice. Ease of execution is supported by a parsimonious instruction to the practitioner containing all essential rules that need to be used to instruct and adjust the behavior of the group.

## 6. Task variation to implement sustained collaboration support

While these solutions might offer support for simple tasks, more complex tasks might be too difficult for groups without access to facilitation support, and flexible use of complex GSS tools. Based on the insights above we propose four strategies for collaboration support in which there is a process leader. Each strategy is focused on a different situation. The strategies are listed in Tables 2a and 2b and explained below.

1. *When an organization wants to support a single high-value ad-hoc task, the most cost-effective approach will most often be to hire an external facilitator on a consulting basis.* This approach will save the costs and avoid the risks of developing facilitation skills inside the organization. Additionally, investment in technology support for a single task should be limited to existing technology or, if needed, external support can be temporarily acquired.

2. *When a single, recurring task needs support, the most cost-effective approach will most often be to hire an external collaboration engineer to optimize a process design and to train practitioners to execute it.* Such an approach leverages domain expertise in the organization without having to develop in-house Collaboration Engineering skills. When technology support is required it should be designed or customized specifically for the organization. Practitioners should also be trained to use the technology. In the case of

complex technology, practitioners should co-facilitate where one operates the technology and one offers the process guidance.

3. *When organizations require support for a wide variety of ad-hoc tasks the most cost-effective approach will most often be to develop an in-house facilitation capability.* However, in order to mitigate the fact that good internal facilitators are often promoted away from facilitation jobs, the organization must institutionalize the continuous grooming of new facilitation talent. It would benefit an organization to develop a community of facilitators that use a joint library of facilitation techniques as the thinkLet library [18, 32] For different ad-hoc tasks, different technology support might be required. In this situation, existing technology should be used to support the different tasks. This technology can be configured to fit the specific task.

4. *When an organization wishes to support many recurring tasks, the most cost-effective approach will most often be to develop an in-house Collaboration Engineering practice.* The organization can support its most successful facilitators to develop the skills to perform Collaboration Engineering roles. They can mix support for ad-hoc processes with design projects for recurring tasks. To offer such facilitators appropriate technology, we can offer them a studio which avails them software components that they can use to assemble collaboration support tools that fit the tasks they face, and that can be used by practitioners on a recurring basis.

	Organizational roles and collaboration process support	
	Single task	Many tasks
Ad-Hoc task	Design and execution by external facilitator	Design and execution by internal facilitator(s) using thinkLets
Recurring task	design by collaboration engineer, execution by practitioner	Design by collaboration engineer, execution by practitioner growing to internal facilitator/ collaboration engineer

**Table 2a. Overview of organizational facilitation support strategies.**

	Organizational roles and collaboration technology support	
	Single task	Many tasks
Ad-Hoc task	Application of existing technology by external chauffeur	Application of existing technology by internal chauffeur
Recurring Task	Design of task specific technology by collaboration engineer with use of the GSS studio, application by practitioner	Use of a GSS studio by collaboration engineer, gradual transition to internal facilitator/ collaboration engineer, application by practitioner

**Table 2b. Overview of organizational facilitation support strategies.**

### 7. Conclusions

This paper presents the results of interviews in which we analyzed the task variation and separation of roles involved in the implementation of collaboration support. Based on these insights we reflect on strategies to offer collaboration support to groups that have no access to such support in two distinct situations, those situations where we try to eliminate the role of the facilitator and those situations where we need group facilitation. Although Collaboration Engineering and ThinkLets have been used and tested in a range of environments, the full model presented above needs systematic application across varied domains and conditions to evaluate its robustness under the pressures of organizational adoption and its performance in terms of both costs and benefits to adopters. There also needs to be further consideration where GSS designs are based on alternate philosophical underpinnings. For example, the roles and activities discussed may be quite different in different GSS designs, such as those of Ackermann and Eden [1, 12]. Future research could also involve observation of roles in practice environments, for example linking individual skills, attitudes and experience to effectiveness in different CE roles. This will allow us to further evaluate the different approaches to the organization of collaboration support.

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