Exploring the Use of Stories in Patterns of Collaboration

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Abstract
Stories are an ancient way to communicate experiences (i.e. direct observations of or participation in events as a basis of knowledge). By looking closely on how experts communicate, we find that they tell stories to convey the challenges and solutions they encountered. Thereby, stories can play a major role in group decision-making, but so far the role of storytelling during group decision-making has not been extensively researched. Based on these grounds we investigate in this article the possible use of stories in group decision-making processes. For that purpose, we conducted a series of interviews with professional facilitators on how they have perceived the use of stories in decision-making processes. We present our analysis of the interviews along the patterns of collaboration and extract a set of propositions for future research.

1. Introduction

With experts leaving and engineers and managers of the baby boomers about to retire there is a growing concern in organizations over retaining their knowledge and experiences. Organizations fear to lose knowledge and expertise needed for their everyday business. With regard to decision making in organizations, particularly for ill-structured problems, their knowledge and experience is invaluable. In this paper we understand decision-making as a process involving problem analysis, the creation and evaluation of alternative solutions, and the choice between the created alternatives [29]. ‘Soft knowledge’ (e.g. knowledge about the processes that a team had deployed to achieve their goals and why these processes seemed to have worked well or badly) are hardly captured and reused for decision-making.

By looking closely at how experts communicate, we find that they tell stories [8, 18, 23]. Stories are an ancient way to share experiences. Stories can be understood as a sequence of events (not necessarily in chronological order) and their circumstances, communicated in writing or orally. They can contain an evaluation of events or a moral. We tell stories about our personal experiences to convey meaning and to make sense of our experiences. Experts use stories to talk about their experiences, the challenges they encountered and the lessons they learned. Considering that experts are often part of group decision-making, stories might emerge or be used in these decision-making processes.

Stories are however not just a means to communicate an experience; they are also a means to make sense of a situation [36]. Sense-making (i.e. the process by which people give meaning to experience) can be a social activity where plausible stories are preserved, retained or shared [14, 19]. Within the context of group decision making sense-making might play an important role in, e.g., understanding the problem situation or the feasibility of alternatives.

Based on the above observations, it becomes apparent that stories can play a major role in group decision-making. So far, the role of storytelling during group decision-making has received little attention from researchers. Pennington and Hastie [13, 24] have investigated the role of stories in jury decision making. Bao et al. [2] observed that storytelling was frequently used to set up a new idea or proposed change in strategy during a brainstorming session. Nguyen et al. [21] employed user stories to elicit system requirements.

Within this article, we investigate the feasibility of reusing expert stories for decision-making. In decision-making, collaborative processes have a major advantage compared to individual decision-making processes, as they take multiple views into account. This paper therefore investigates the use and emergence of stories in group communication during collaborative decision-making. In this paper, we use the term group communication to refer to an exchange of information (e.g. in written or oral form) within a group during a collaborative process or part of such a process.
We build our research approach on the perception a facilitator has on the use of stories in a collaborative decision-making process. Such a facilitator creates 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 [3]. Therefore, facilitators are in the unique position to observe the group communication and can provide us with their insights on how stories are used. We focus on collaborative processes following patterns of collaboration [4, 34]. This allows us to clearly identify the use of stories in the different stages of a collaboration process as patterns of collaboration characterize a group activity as the members move from an initial state to a next state [34].

We conducted five semi-structured interviews in which we interviewed facilitators on their observations and experiences of facilitated sessions within a group support system (GSS). In these interviews, we explored during which patterns of collaboration stories emerge, what their purpose in the group communication is, and which factors influence whether a group uses stories. The interviews revealed that stories play an important role in group communication. Stories are typically used within the clarification, evaluation and consensus building pattern of collaboration.

In the following section we define our understanding of stories, elaborate on their use in decision-making and give a short overview over relevant concepts of collaboration engineering. We then elaborate our research approach and present our results. In our conclusion, we discuss our findings and identify propositions for future research on the use of stories in decision-making processes.

2. Background

When groups make decisions, the team members have to communicate with each other. Part of this communication might (or might not) take place by telling stories. In this section, we are first reviewing existing literature on how stories are used to communicate personal experiences, make sense of problem situations, and persuade others; we would expect stories to be used in a similar way in decision-making situations. After reviewing the literature on stories, we take a look at group decision-making and existing research on how stories are used there.

2.1. Stories

When considering the sharing of experiences through stories and the use of stories in knowledge management and research, we can assume that sharing stories through personal communication is a well-established practice.

First, stories are one way to share experiences. From a historical perspective we can observe that in societies where the technologies of literacy like writing and printing are unfamiliar to most of the population, experiences and knowledge are shared in two ways: through (guided) imitation and through verbal communication - particularly through telling and retelling of stories [33]. In today’s organizations, technical experts use stories to talk about their personal experiences, the challenges they encountered and the lessons they learned [23]. Expert project managers like to share their knowledge about best practices for project management as well as lessons learned while dealing with problems in a project through stories [8].

Telling stories in organizations has also been connected to knowledge management [18]. In all these cases, the stories convey cultural aspects (values, beliefs, norms and cultural practices), the personal perception of a situation or an event, examples of good and bad practices, as well as speculations about what might have happened [7, 22, 23]. In addition, these stories are placed into context in order to improve understanding of the audience [7].

Second, stories are used purposefully in the area of knowledge management and organizational learning to share experiences and tacit knowledge. Schümann et al. [28] developed a platform to support communities in sharing stories and derive best practices. The platform has been used in a community of churches and in a community of university consortia that offer dual degrees within the Atlantis program. In the church environment they utilize direct verbal storytelling as a key element in a process fostering reflection on good practices in a learning organization. Santoro et al. [27] use a group storytelling approach to elicit information about business processes, thus capturing the activities performed by practitioners. In both cases, stories are used as an approach to gather information about practices and experiences of practitioners.

Third, stories about personal experiences are also used in research methods and tools to explore the subjective perception and experiences of individuals: they are leveraged within research to gain insights into experiences, norms and values of people [9, 20, 25, 26].

Both the story-sharing in organizations and the use of stories in research let us assume that stories are suitable to share and communicate experiences and insights, but also cultural aspects (values, norms, beliefs).

Stories are not just a means to communicate an experience; they are also a means to make sense of a situation [36]. Sense-making (i.e. the process by which
Stories are also discussed within the context of persuasion. Until [12] the scientific study of persuasion has focused mainly on the impacts of advocacy and argumentative messages. Today, there are a number of studies focusing on the persuasive impact of stories (see e.g. [32, 37]). This research shows that, under certain conditions, stories can be used to change the attitude of a person. We therefore expect stories to be used on collaborative settings where it is important to convince the group members of a position.

Overall, we expect stories to play an important role in group decision making. However, there is little research linking group decision making to stories. One notable exception is the research of Pennington and Hastie [13, 24]. They have investigated how jurors make their verdict in a court of law, and found that stories can play an important role in this setting. Jurors combine the input they get in the court with their own expectations and knowledge about how people are motivated, and create alternative storylines explaining the evidence. They then use these storylines and the role the defendant plays in each storyline to derive their verdict.

### 2.2. Patterns of collaboration

Collaborative processes involve (among others) interaction, discussion, evaluation, shared understanding, choosing, and consensus building [15].

In decision-making, collaborative processes have a major advantage compared to individual decision making processes: taking into account multiple views is a strong point of group decision making that cannot be realized by individuals.

French et al. [11] stress the importance of recruiting individuals with different backgrounds, beliefs and values in order to maximize the full potential from working with groups of decision makers. Heterogeneous views in a group can lead to reduced levels of overconfidence [30], more accurate judgments [31], and an increased exchange of (unique) information [6].

Individuals with different backgrounds, beliefs and values have to be part of the process in order to maximize the full potential from working with groups of decision makers. The exchange of meaningful information as well as beliefs and values is a condition for heterogeneous views to lead to the positive effects and therefore key in collaborative processes.

We have seen in the literature review on stories that they can be used to communicate personal experiences, make sense of problem situations, and persuade others. We therefore expect stories to play a major role in group communication in collaborative processes.

Within this research we focus on group communication in collaborative processes based on the patterns of collaboration [4, 34], as these patterns allow us to clearly identify the emergence and use of stories in the different stages of a collaborative process. There is little research available that describes the use of stories within group communication in the patterns of collaboration. We found only two studies linking the generate phase to storytelling, and no research directly linking the other patterns to storytelling.

Table 1 lists and defines the patterns of collaboration.

<table>
<thead>
<tr>
<th>Pattern</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>Generate</td>
<td>Move from having fewer to having more concepts shared by the group</td>
</tr>
<tr>
<td>Clarify</td>
<td>Move from having less to having more shared understanding of concepts</td>
</tr>
<tr>
<td>Reduce</td>
<td>Move from having many concepts to a focus on fewer concepts deemed worthy of further attention</td>
</tr>
<tr>
<td>Organize</td>
<td>Move from less to more understanding of the relationships among concepts</td>
</tr>
<tr>
<td>Evaluate</td>
<td>Move from less to more understanding of the relative value (utility, priority) of the concepts under consideration</td>
</tr>
<tr>
<td>Build Consensus</td>
<td>Move from having fewer to having more group members who are willing to commit to a proposal</td>
</tr>
</tbody>
</table>

Nguyen et al. [21] have employed user stories to elicit system requirements for a system allowing students at a university to buy and sell text books. Here, the participants (students from a Midwestern university) were explicitly asked to contribute their ideas in the form of stories during the generating phase. The researchers compared how many stories
individuals and groups generated. Initial results show no conclusive difference between groups and individuals for quantity of stories.

Bao et al. [2] observed the instances of storytelling during brainstorming sessions and found that storytelling was frequently used to set up a new idea or propose a change in strategy. Furthermore, they observed that groups, that had received a series of prompts in the days before the brainstorming session, shifted faster from the story to the idea. These prompts appear to be a factor influencing the use of stories during the brainstorming.

Particularly the last research indicates that stories emerge during the generate activities. Based on the literature review on stories we also expect stories to occur in the clarify pattern, the evaluation, and in the building of consensus. This leads to the following hypothesis

In group communication, stories emerge during generate, clarify, evaluate up and building consensus.

For the clarify pattern, the role of stories in the context of sense-making and in communicating experiences and cultural aspects might be important. For the evaluate and build consensus pattern, we expect stories to be used for explaining positions and persuading group members.

3. Research approach

We build our research approach on the perception a facilitator has on the use and occurrence of stories in a facilitated session utilizing a GSS, as a facilitator is in the unique position to observe the group communication and can therefore provide us with her insights into how stories are used during these sessions. Based on these perceptions, we explore during which patterns of collaboration stories emerge (in the group communication), what their purpose in the group communication is, and which factors influence whether a group uses stories. In the following, we describe our approach in more detail, and present our results.

Interviewees / Instrument. More specifically, we conducted five semi-structured interviews: We interviewed facilitators on their observations and experiences of facilitated sessions; with the exception of one facilitator, all facilitators were familiar with the patterns of collaboration.

The interviewees were selected based on their experience in conducting facilitated sessions (indicated by years of experience), their familiarity with the patterns of collaboration, and their availability. Table 2 gives an overview over the interviewees. The group tasks and themes addressed by the facilitators vary considerably. Examples include risk management, financial decision (e.g. budgeting), innovation and designing alternative courses of action.

<table>
<thead>
<tr>
<th>Facilitator</th>
<th>Years of Experience</th>
<th>Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1</td>
<td>9</td>
<td>Female</td>
</tr>
<tr>
<td>F2</td>
<td>&gt; 10</td>
<td>Male</td>
</tr>
<tr>
<td>F3</td>
<td>12</td>
<td>Male</td>
</tr>
<tr>
<td>F4</td>
<td>14</td>
<td>Female</td>
</tr>
<tr>
<td>F5</td>
<td>&gt; 10</td>
<td>Male</td>
</tr>
</tbody>
</table>

In addition to the patterns of collaboration, we also explored other factors by asking the interviewees to contrast two types of sessions: sessions with high occurrence of stories versus sessions with low occurrence of stories.

Data Analysis. We used the patterns of collaboration as an initial framework for analyzing the interview data (see section 4.1 for the results).

The patterns of collaboration can be implemented with a ThinkLet-based collaboration process. A ThinkLet is a named, packaged thinking activity that creates a predictable, repeatable pattern of collaboration among people working toward a goal [3]. Each ThinkLet can be associated with several patterns of collaboration; therefore the patterns of collaboration do not form a categorization of the ThinkLets [16].

Even though we did not specifically ask about ThinkLets, some facilitators elaborated on specific ThinkLets; if these ThinkLets were mentioned in the context of a pattern of collaboration, we have associated the ThinkLet with that pattern; otherwise the ThinkLets were matched to a pattern using [5]. The appendix contains a short description of all ThinkLets mentioned in the interviews.

The appearance of stories in GSS sessions was not always related to a pattern of collaboration. We have summarized these appearances in section 4.2.

In order to analyze the factors influencing the occurrence of the stories in a session, we clustered these factors around four emerging themes: factors relating to the facilitator, factors relating to time, factors relating to the goal of the session, and factors relating to the group (see section 4.3. for the results).

The analysis of the interviews with regard to the purpose of the stories in group communication has not been finalized yet; some initial results are presented in relation to the patterns of collaboration.
Limitations. The interviews do not specifically focus on the emergence and use of stories in decision-making situations. As it is questionable whether a facilitator can precisely distinguish between the use of stories in decision-making sessions versus other facilitated sessions, the interviews take a broader stance and ask for the emergence of stories in facilitated sessions.

In addition, we exclude collaborative modeling done in GSS sessions as well as facilitation without a GSS system. Since we have conducted a first exploratory study, the sample size is comparatively small. Furthermore, we focus on perceptions the facilitators have on the use and emergence of stories in GSS sessions. However, we expect to be able to form propositions that can be tested in further research.

4. Results

In this section, we present the results we gained by analyzing the interviews. We summarize the data, and present initial propositions (highlighted in italics and numbered from P1 to P10) that can be tested in future research.

4.1 Stories and the patterns of collaboration

In the following, we describe the perception of the facilitators with regard to the patterns of collaboration. Where applicable we elaborate on techniques fostering the emergence of stories, on the purpose of the stories, on the conditions under which stories appear, and other observations the facilitators have made with regard to stories in these patterns of collaboration.

Table 3 summarizes these results by providing an overview over the occurrences of stories in the various patterns and techniques mentioned in this context.

Generate. The generate pattern can allow for storytelling, provided there is enough room to elaborate on ideas. Stories can also emerge in relation to design tasks. Three facilitators stated that they had observed stories in the generate phase; none of them described stories as typical for this phase.

Particularly techniques allowing participants to elaborate on ideas and concepts could lead to stories, e.g. in “turn-taker kind of settings”. It is noteworthy, that two facilitators emphasized that techniques such as a free brainstorm do not provide enough room for stories. One facilitator deliberately tries to keep the group on a more abstract, concise level during the generate phase.

With regard to design tasks, one facilitator mentioned a case where participants were asked to generate ideas for mobile services. The participants used their own stories (having arrived in the Netherlands just a week ago) to reflect on the situations where services like finding the next train would have been helpful to them. Another facilitator observed stories in an electronic brainstorm during a session designing new services for a firefighter department.

Clarify. The clarify pattern clearly endorses stories in group communication. All facilitators stated that they had observed stories, and two facilitators considered stories typical for the clarify pattern.

In the clarification phase, stories can support participants in explaining the concepts under consideration: one facilitator explained that stories are used in the ThinkLet 1Up to support an argumentation of why the new idea is better than the one already there. Another facilitator outlined the importance of shared understanding reached through the ThinkLet Fast Focus. He described the effects of omitting the clarification with “They [the participants] weren’t confident that people knew what they meant by what they had written, and so they objected to the process”. At the same he asserted that stories frequently occur in a Fast Focus.

Reduce. The facilitators provided us with mixed views on the reduce pattern. Three facilitators consider reduce a pattern, where stories sometimes occur, whereas two facilitators consider reduce a pattern that induces few stories in the group communication.

On the one hand, a facilitator emphasized that only elaborate, inefficient implementations of the reduce pattern foster the telling of stories. On the other hand, stories seem to support the participants in justifying “why it is really important to keep a particular set of ideas” or “why they don’t want to have a particular set of ideas”.

Organize. The organize pattern is the one least associated with stories in group communication. Only two facilitator associated stories with organization activities. Here, both facilitators observed that stories are used as justifications for the categorization of concepts, e.g. during a Bucket Walk.

Evaluate. Evaluating is strongly associated with stories. All facilitators have observed stories during evaluation activities, one facilitator considered evaluation as one of the key patterns where stories occur.

The facilitators observed that participants use stories in order to convince other participants about their perspective of a situation, to explain a vote, or to explain their own perspective. One facilitator linked stories in the evaluation phase to qualitative evaluation, e.g. when checking on the feasibility of a solution.
The facilitators mentioned several ThinkLets within the context of evaluation: the Lobbyist invites participants to advocate a concept, which can happen through with stories; while the Straw Poll contains no storytelling, the following “Crowbar is an invitation to do tell stories”.

**Build Consensus.** Building consensus is strongly associated with stories as well. All facilitators have observed stories in this phase, four facilitators considered stories to be typical for this phase.

The facilitators stated some reasons on why stories occur frequently during consensus building activities: stories are used to blame others (in the context of commitment to a shared project), to explain a particular perspective on a situation, to try to persuade the ‘other’ side, to share values, and to align goals.

One ThinkLet mentioned to support storytelling is Red Light – Green Light. One facilitator mentions stories as an unwanted communication mechanism while building commitment: in the Crowbar-ThinkLet participants might have a tendency to “lapse into storytelling”, even though in his opinion Crowbar calls for more concise arguments.

<table>
<thead>
<tr>
<th>Pattern</th>
<th>Do Stories Occur?</th>
<th>ThinkLets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generate</td>
<td>Sometimes, when the group has room to elaborate on concepts.</td>
<td>-</td>
</tr>
<tr>
<td>Clarify</td>
<td>One of the key patterns, where stories occur. Stories are used to create shared understanding.</td>
<td>1Up, Fast Focus</td>
</tr>
<tr>
<td>Reduce</td>
<td>Mixed perceptions</td>
<td>Bucket Walk</td>
</tr>
<tr>
<td>Organize</td>
<td>Rarely</td>
<td>Lobbyist, Crowbar</td>
</tr>
<tr>
<td>Evaluate</td>
<td>One of the key patterns, where stories occur. Stories are used to explain personal perspectives and to justify votes.</td>
<td>Crowbar, Red Light – Green Light</td>
</tr>
<tr>
<td>Build Consensus</td>
<td>One of the key patterns, where stories occur. Stories are used for blaming, explaining, persuading, sharing values, and to align goals.</td>
<td></td>
</tr>
</tbody>
</table>

It is apparent that stories play an important role in group communication. As one facilitator puts it:

“I can't imagine sessions without stories. I think it’s more a function of the things people have to do to collaborate effectively than it is a function of a particular domain. I think every time people are working together they need to communicate their values, they need to clarify their language, they need to justify their positions - and stories do that.”

Based on the results presented in this section we make the following propositions:

(P1) Stories emerge in group communication more frequently when there are opportunities to elaborate. When designing a session, the facilitator also has to consider how much room for elaboration is necessary for these patterns. It appears that, (P2) stories are more likely to appear during clarify, evaluate, and building consensus, than during generate, reduce and organize.

The initial hypothesis from section 2.2 (in group communication, stories emerge during generate, clarify, evaluate up and building consensus) is confirmed. However, the detailed results for the generate phase have surprised us. The interviews left us with the impression that there is a tendency to inhibit storytelling during the generate phase, except when stories are a fitting structure to present ideas (like in a design task). The elaboration on the ideas is pushed from the generate phase into the clarify phase. The picture on reducing and organizing is still unclear and therefore requires further research.

### 4.2 Other appearances of stories

When stories are told in a facilitated GSS session, they are not always tied to a particular pattern of collaboration. We found four such cases: stories as a disturbance, stories as an indication of ‘mental overload’, stories told by a facilitator to frame the session, and stories as an input for the session. In the first two cases, stories do not help the group to reach their goal. In such situations, a facilitator needs to intervene.

**Stories as a Disturbance.** One facilitator felt that “one thing I have to guard against is a participant who wants to tell a story about everything that comes up in conversation”. Here, the facilitator speculates that the need to tell stories is a characteristic of the participant. He further elaborates that these “war stories” do not advance the group towards its goal, because the story is not clarifying a point, is not building commitment, and is not adding value in any way.

**Stories Indicating Mental Overload.** Stories could also be an indication that the group is “mentally overloaded”, particularly towards the end of a session. One facilitator expressed it like this: “So much happened, and then there is a kind of need of some people to put things into perspective. And the way they do it, and it is not with all people […], to make sense again, they need a story. […] They are basically out of breath mentally.” A facilitator needs to intervene in such situations. One facilitator states that he tries to “reframe” the session.
**Stories Told by the Facilitator.** Apart from the stories told by the participants of a session, one facilitator mentioned stories as a tool to frame, to contextualize, and to re-frame a session. In this case, the facilitator herself tells the story. He mentioned two ways to frame and to contextualize a session through stories. First, a story can be used in the beginning of the session, in order to help the participants to comprehend what the session is about and what is going to happen. Second, a story (e.g. of a journey) can be used as a reoccurring, overarching theme during the session to provide orientation, but also to direct the participants in their activities by serving as an analogy. Here, the analogy can also be used to re-frame the session, by changing the analogy accordingly.

**Stories as Input for the Session.** Stories in the form of scenarios can also be used as input for a GSS session. In one case, a facilitator elaborated on how scenarios about terrorism triggered storytelling in the group. The group was asked to evaluate the feasibility of the scenarios: “They wanted feedback on whether it's feasible or not. And that invites again for storytelling: it's about scenarios, it is open ended”.

### 4.3 Factors influencing the emergence of stories

Apart from the patterns of collaboration, other factors influenced the frequency of stories emerging in the group communication. We clustered these factors into the following groups: factors relating to the facilitator, factors relating to time, factors relating to the goal of the session, and factors relating to the group. Factors that relate to unwarranted use of stories were already presented in the previous section.

**Factors Relating to the Facilitator.** The facilitator can influence how frequently stories emerge in a session. The experience and attitude of the facilitator might play a role here. One facilitator elaborated on how her attitude towards stories changed over time. In the beginning, she would not ask for stories, because she considered stories as distracting from the goals they had to meet. She felt that she did not have enough “experience, tools, and capacity to focus back on the task”. In contrast, nowadays she asks people to “explain it, or give an example, or tell something about it”, which can lead to stories from the participants.

This example already demonstrates that a facilitator influences how the group communicates by the way of asking for group input. So, on the one hand, a facilitator can actively encourage participants to elaborate and to tell a story. On the other hand, a facilitator can discourage a group from using examples and stories. One interviewee described this as follows:

a facilitator can “push the group not to bring stories, but to be focused, to make a more precise point”.

This leads us to the following two propositions:

(P3) The facilitator can actively influence the frequency with which stories emerge in group communication.

(P4) Stories are more likely to emerge in group communication when the facilitator has a positive attitude towards storytelling.

**Factors Relating to Time.** One attribute of any session is the time available for the session. The available time and the perception of available time (by the participants) might indirectly influence the occurrence of stories in a GSS session.

First, (P5) stories are less likely to emerge in short sessions. In short sessions the facilitator may have an incentive to push the group towards a short, precise discussion in order to save time. One facilitator stated that [a very short session] is one factor that immediately reduces the possibility for longer stories”.

Second, the way a group perceives available time might also influence whether stories are used: for example, one facilitator stated that in the beginning of a session “they [the participants] are still considering 'What are we going to do? Do we have enough time?'”, resulting in few stories being told by the group. Therefore, (P6) stories are less likely to emerge when the group members have the perception that there is little time available for the task.

**Factors Relating to the Goal of the Session.** The goal of a session can relate to deliverables (e.g. three projects to fund) and to the group process (e.g. learning from the group, or building commitment towards a joint goal). In order to reach the goal, the problem owner asks for input from the group, whereas the facilitator has to design the collaborative process and steer the group towards the goal.

(P7) Stories emerge more frequently when the group process has a high priority. There are two indications supporting this proposition. First, in situations where the group experiences problems (e.g. misunderstandings, lack of focus), the facilitator has to make a decision: “sometimes I think we just get through because we want the result, and sometimes it might be better to say ‘ok, we won't get to the result we planned, but we have to stop here and give time to the problems that arise’”. The choice the facilitator makes depends also on the priorities of the problem owner (“It depends a little bit on the situation or on the problem owner, what he values is more important: the group process or that he has these three projects that he has to fund, or whatever.”). Second, two interviewees stated that when the goal is to learn from the group (e.g. to “pick the brains of the experts”), more stories
emerge, because this is more about "explaining than arguing".

Another factor influencing the emergence of stories can be the main question framing a session: (P8) closed questions trigger less storytelling from the group than open questions asking for a high level of detail. One facilitator explained: "if you have a session on deciding between alternative A or B and discussing arguments and reasons, then you get less stories, you get more like a debate arguments". Furthermore, the interviewees named an open question as a factor triggering storytelling. Such questions include asking for a contextual picture (e.g. exploring different types of discrimination) or for the feasibility of scenarios, and require a high level of detail in their answers.

Factors Relating to the Group. Last, but not least, the facilitators perceived some characteristics of a group as a factor influencing the emergence of stories. Factors mentioned in the interviews are the group composition and the focus of the group on the task. As one of the conditions influencing the emergence of stories in group communication the group composition was mentioned. The facilitators associate "heterogeneous groups" or "multidisciplinary teams on a complex problem" with a need to clarify ideas.

One facilitator observed that when she has experts from different disciplines in the group "they will feel the need to explain more because the others are basically laymen is in their field". Another interviewee stated that storytelling might help to overcome the gaps very diverse people have between each other's knowledge.

However, there was also one counterexample. A small minority of experts was operating within a larger homogeneous group. Here, the experts seem to feel isolated, not belonging to the group at all, and no exchange of experiences took place.

Even when the participants form a mixed group of experts from different disciplines, this is not a guarantee that stories are used. The familiarity of the group members with each other and with the topic of the session could have an influence as well. One facilitator explained that during a kick-off meeting or a strategy meeting, it is "usually a group that is quite new to each other and [the participants] are not yet so deeply into that topic", which might lead to more storytelling "then when you a topic where people worked on for a year already together ".

This leads us to the following proposition: (P9) Stories are more likely to appear in group communication when participants with diverse backgrounds have to overcome the gaps between each other’s knowledge.

Second, stories are seen as a way to come to focus within the group. One facilitator directly claimed that elaborate arguments and stories can be a way to focus a group. Another facilitator used stories at the beginning of a session to allow the participants to tell what "is dearest to their heart". In his opinion, this use of stories can give focus to the group without making that focus explicit: "people feel they are moving into the right direction, but really can't pinpoint what the right direction is".

(P10) Stories are a means to lead a group towards a shared focus, even if the focus is not apparent to the group members.

5. Conclusions and future research

Based on the observation that the role of storytelling during group decision-making has received little attention from researchers, we have investigated during which patterns of collaboration stories emerge and which factors influence whether a group uses stories. We have built our research approach on the perception a facilitator has on the use of stories in a collaborative decision-making process.

It is apparent that stories are essential for the collaborative process; stories play a major role in the clarify pattern, evaluate pattern, and in the consensus building pattern. Furthermore, we derived a set of propositions from the interview material:

(P1) Stories emerge in group communication more frequently when there are opportunities to elaborate.
(P2) Stories are more likely to appear during clarify, evaluate, and building consensus, than during generate, reduce and organize.
(P3) The facilitator can actively influence the frequency with which stories emerge in group communication.
(P4) Stories are more likely to emerge in group communication when the facilitator has a positive attitude towards storytelling.
(P5) Stories are less likely to emerge in short sessions.
(P6) Stories are less likely to emerge when the group members have the perception that there is little time available for the task.
(P7) Stories emerge more frequently when the group process has a high priority.
(P8) Closed questions trigger less storytelling from the group than open questions asking for a high level of detail.
(P9) Stories are more likely to appear in group communication when participants with diverse backgrounds have to overcome the gaps between each other’s knowledge.
(P10) Stories are a means to lead a group towards a shared focus, even if the focus is not apparent to the group members.

Though these propositions need to be tested in further research, they also guide future research on the use of stories in the different patterns of collaboration or the elicitation of stories in facilitated sessions.

With regard to the use of stories in decision-making, the propositions P8 and P9 deem most important. Decision-making is a process where the problem has to be analyzed, alternatives have to be designed and their feasibility evaluated; thus these types of decisions appear to resemble open questions. Furthermore, if P9 holds, stories can be used to communicate the perception of problems in heterogeneous groups. It also seems feasible to use recorded stories to communicate, for example, the perception of a past problem in order to inform the current decision making situation.

The research presented in this paper has implications beyond group-decision making. Stories are often considered in online communities for knowledge sharing and collaboration. We, e.g., explore the use of stories in the Atlantis Active community [1, 17]. This community elicits and uses stories to share experiences and lessons learned on the development of cross cultural dual degrees. Like many online communities Active faces challenges to mobilize participants in sharing stories, and also in using stories for learning and decision making. The insights gained in this research on the emergence and use of stories help us to further understand how synchronous or asynchronous facilitation for such platforms can foster the elicitation and use of stories (e.g. P2 might indicate that the clarify pattern is a good starting point for eliciting stories). We intend to conduct further research in order to use our results for improving the elicitation of stories in the Atlantis Active community and to understand how support environments can help communities not only to share stories, but also to use them for mutual learning and improvement of work practices.

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7. References


8. Appendix

For a detailed description of ThinkLets see [5].

1Up: Team members propose high quality contributions, while explaining why they are better than any of the previous ones.

Bucket Walk: Team members review the categorization of contributions. Make sure that all contributions are appropriately placed and understood.

Crowbar: Team members discuss the differences in opinion within the group, e.g. after a Straw Poll.

Fast Focus: Team members browse through existing contributions and discuss the meaning and wording of these contributions.

Free Brainstorm: Team members brainstorm ideas in response to a single question or prompt. They work on separate pages that are circulating among them and can contribute new ideas or react to ideas already present on the page.

Lobbyist: Team members argue in favorably for one of the contributions, thereby getting a fair chance to put forward his or her preferences based on the stakes they perceive.

Red Light- Green Light: Team members repeatedly cast votes on contributions based on multiple criteria. Simultaneously they try to explain the differences in opinion.