Mediation Systems

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Zusammenfassung

Ausgehend von typischen Rollen und Zielen ("use cases") zeigen wir mögliche Anwendungen existierender Software-Tools zur Unterstützung klassischer Mediation auf und definieren *Kernkomponenten* mit denen ein relativ großer Bereich von Mediationsaufgaben unterstützt werden kann. In diesem Beitrag versuchen wir Mediationssysteme zu definieren und von allgemeineren Groupware-Typen abzugrenzen.

Abstract

Considering the roles and tasks ("use cases") in a standard mediation procedure, we identified many possible applications of existing software tools to support the mediation process. Several *core components* supporting a wide range of mediation tasks were found. The paper attempts to define mediation systems and distinguish them from more general purpose groupware.

1. Introduction

Our working definition of "mediation" is any moderated conflict resolution discourse, regardless of the procedures, methods or tools applied. That is, except for the mere presence of a mediator, our definition does not place any requirements on the mediation procedure. This definition of mediation distinguishes it from other forms of discourse, such as deliberation or argumentation, not on the basis of features of a particular procedure, but rather on the basis of its goal: conflict resolution.

At this level of abstraction it would be quite difficult, if at all possible, to investigate whether and to what extent information technology can provide any useful support for mediation. On the other hand, defining mediation in terms of its goals leaves open the possibility of designing novel kinds of mediation procedures which perhaps

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make better use of the potential of new information technology. But we do not want to be so presumptuous as to try to develop a completely new procedure from scratch, without taking into consideration the state of the art in professional mediation practice. Thus, our starting point is an analysis of "standard" mediation procedure (Zilleßen 1991; Troja 2001) from a software engineering perspective.

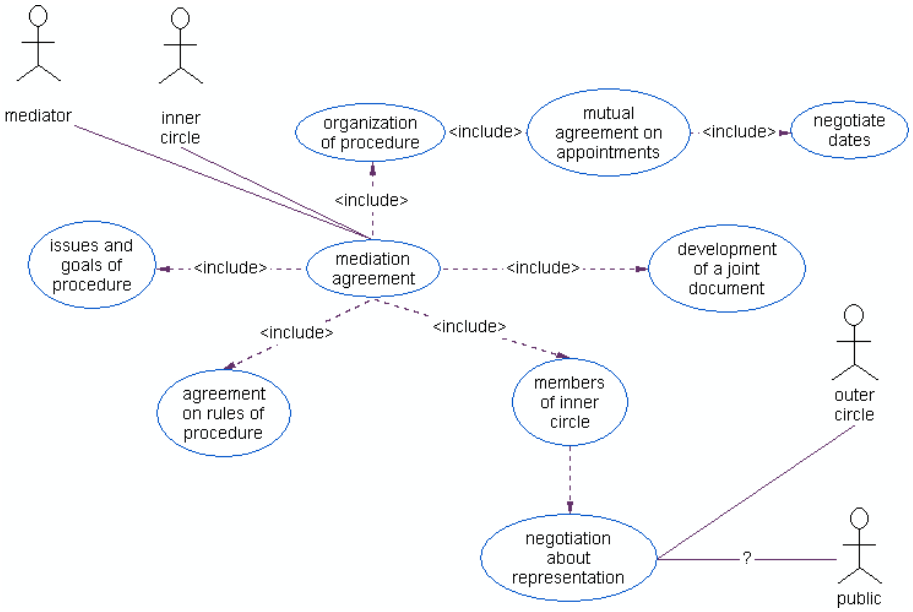

Figure 1
Phase 1 of mediation procedure and potential roles and tasks (use cases).

We have begun identifying so-called "use cases" that is roles (e.g. mediator, inner circle, outer circle, public) and tasks, in each of the phases of the mediation procedure (Figure 1, 2). For each use case we have collected various ideas, in a kind of brainstorming process, about how information technology might usefully be applied to support each of the use case. This approach is simply an application of standard software engineering principals. This method gives the requirements of mediation higher priority over any particular information technology, let alone particular tools or systems. Our research and development work here is driven by requirements, not technology. In this brief paper space is insufficient to present the use cases and brainstorming ideas for each mediation phase. Rather, a summary listing of the software tools we identified as being potentially useful for each phase will have to suffice.

2. Summary of Tools for Each Mediation Phase

In this section, we will collect and organize all of the software tools considered during the process of identifying and analysing the use cases of each of the phases of the standard mediation procedure.

- **Phase 1: Preparation and Mediation Agreement** - Distributed hypertext (World Wide Web), discussion forum, online surveys and polls, spreadsheet and charting, statistics package, screenwriting software, shared workspace, group calendar and scheduling program, mind mapping and other visualization tools, email, shared online address book, mailing list, video conferencing, presentation software, plan and rule modeling and visualization (Prakken and Gordon 1999), negotiation support, document assembly system, collaborative authoring environment (Shum and Sumner 2001) (Figure 1, task "development of a joint document").
- **Phase 2: Information and Issue Gathering** - Shared workspace, discussion forum, visualization software, and discourse grammars, e.g. for Issue Based Information Systems (IBIS) (Kunz and Rittel 1970).
- **Phase 3: Interest Clarification -** Discussion forum, chat, and possibly a system for supporting subgroup formation and caucusing (Figure 2, task "interest clarification").
- **Phase 4: Creative Search for Solutions -** Bulletin board (for brainstorming), clustering and categorizing tools, and an online polling or voting system.
- **Phase 5: Evaluation and Selection of Options** - Visualization software, online surveys, discussion forum, argumentation system (Ludwig 1997) (Gordon and Karacapilidis 1999), and possibly a GIS or multi-criterion decision support system (Rinner May 1999) (Jarke, Jelassi et al. 1987).
- **Phase 6: Agreement and Monitoring** - Collaborative authoring environment, knowledge management system for design rationales, project management (for task monitoring and commitment management), and discussion forum.

Phase 1 has the longest list of tools, but some of these are of such obvious general utility that they were mentioned only once: the World Wide Web, calendar, address book, email, mailing list, and the presentation software. The tools which were explicitly mentioned in more than one phase are shared workspaces, discussion forums, online surveys and polls, visualization, and for collaborative document authoring.

3. Definition of Mediation Systems

These observations lead us to propose the following **core components** for mediation systems:

- Address Book

- Calendar
- Shared Workspace
- Discussion Forum
- Questionnaires
- Visualization and Presentation Tool
- Group Authoring Tool

Distributed hypertext and email are not included, since we presume any reasonable mediation system will make use of standard Internet protocols, so that it can be used in a well integrated way with any standards-based email program or Web browser. The mailing list is also not included, since this can be considered a feature of the address book, rather than a separate component.

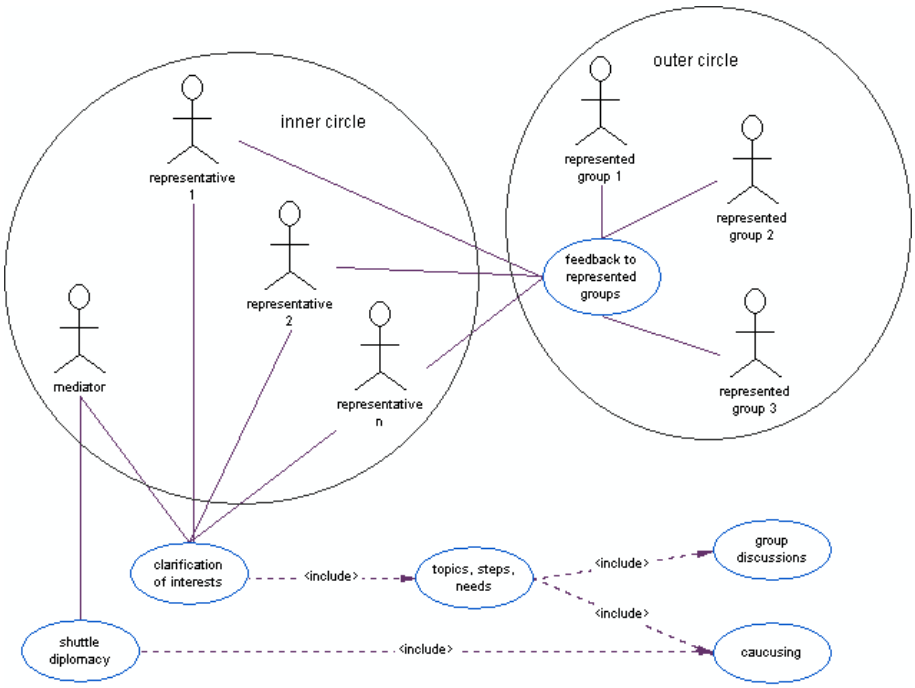

Figure 2
Phase 3 of mediation procedure and potential roles and tasks (use cases).

A definition of **mediation system** compatible with this requirements-driven approach is: An integrated set of tools designed to be generally useful for mediation. Although we do not want to specify a minimum set of tools in the definition, we hy-

pothesize that any system "generally useful for mediation" will provide most if not all of the core components listed above. Most of the components in the core set can be used asynchronously over a network such as the Internet. This does not necessarily preclude their use offline, for example to provide support to a face-to-face meeting. An ideal mediation system would be useful anytime and anywhere, online or offline, before, during and after meetings.

4. Discussion

In this paper we have taken a requirements-driven approach to mediation systems. Starting from a general (working) definition of mediation as a moderated conflict resolution procedure and an analysis of the standard process model for mediation, we have identified tasks occuring in each phase of the process. Only then did we begin to look for possibly useful technology. Some commentators have been skeptical of the idea of mediation systems, because of the importance of face-to-face communication for effectively resolving many kinds of issues, in particular interpersonal ones. This skepticism is based on a misunderstanding: that mediation systems are intended as an online alternative to conventional face-to-face mediation. A good mediation system should be designed to support the requirements of good mediation practice, without trying to promote online communication over face-to-face meetings.

An important insight is that the standard mediation procedure depends on media-based communication, with or without computer support. Many of the tasks depend critically on some means to represent, store and transmit messages and documents, even if these are just conventional paper and post or cards on pin boards. So the issue of mediated communication vs. face-to-face communication is a red herring: clearly both kinds of communication are essential. The more important questions are about the kind of communication tools to use for each task, considering all available technology, old and new.

A basic mediation system can be quickly put together using "off the shelf" applications and systems. There are now quite a few integrated groupware systems which provide most of the desired components: address books, calendars, shared workspaces and discussion forums. Any good vector graphics editor (drawing tool) can be used as a basic visualization tool. There are also a number of more special purpose tree and graph editors which are well suited for this application. A popular program for presentations from a leading software company includes a drawing tool with some support for drawing graphs. There are also programs available for group authoring and online questionnaires, but these are not yet as mature or widespread as the other kinds of tools. However, no existing groupware product, to our knowledge, provides all of the core components we have identified for mediation systems. Thus, there might be a vertical market for special purpose mediation systems, dis-

tinct from the much broader groupware market. Still it is not clear to us at the moment whether this vertical market has the potential to support and sustain the development effort required for such special purpose mediation systems. This would be a good topic for future (market) research.

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