# Online mediation as a tool of public knowledge management for shaping a sustainable information society

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**Abstract**

How can we combine the evolving information society with the requirements of a sustainable development? This question is increasingly becoming the subject of political and scientific discussions. The present paper elucidates the appropriate handling of distributed knowledge as a prerequisite for a sustainable shaping of information society. It is shown that online mediation (computer-supported mediation) might be an appropriate tool of knowledge and conflict management for the emerging digital administration. A prerequisite for the implementation of online mediation is the development of socio-technical systems, i.e. the development of procedures and software tools.

## Knowledge

The term information society is gradually replaced by the term knowledge society. While the apparently unlimited increase of available information has been in the center of a modern society description so far, the importance of knowledge is now becoming the subject of central interest: The construction of knowledge, the availability and application of knowledge and a comprehensive knowledge management determine the way of life and working environment and therefore also modern society to an increasing degree (Mittelstraß 1998). However, what is knowledge and what is information?

Willke (in 1998) distinguishes between data, information and knowledge using criteria of relevance. *Data* are coded observations, i.e., there are no data sui generis, but they are always observation-dependent. Data become *information* if they are integrated into a first context of system-specific relevance (Willke 1998). G.

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Bateson speaks of "a difference which makes a difference" in this context (Bateson 1972).

According to Willke's theory *knowledge* arises first from the integration of information into experience contexts. In this respect, knowledge is more than pure information, rather it is "the possibility of getting something under way" (Bechmann & Stehr 2000: 114) or as defined by the economist Probst "the entirety of the knowledge and abilities that individuals use to solve problems" (Probst 1999: 46).

## Sustainable development

Knowledge therefore is an important action resource (Stehr 1994). This applies in particular to planning and implementing a sustainable development because it is linked with the solution of diverse social, ecological and economic problems. To consider this three-dimensionality and the complexity of the problems to be solved, Agenda 21 emphasizes the role of networking information and knowledge of heterogeneous actors. Apart from a variety of data and information, the knowledge (by experience) of individual heterogeneous actors is especially relevant. This also corresponds to planning theory approaches which regard the development of a common problem viewpoint through the participation and integration of a maximum number of heterogeneous actors as a central prerequisite for mastering complex problems of planning.[3]

Another aspect is the fact that the necessary and comprehensive change to the dominant life, production and consumption patterns cannot be decreed in a "top-down" policy approach, but has to be complemented by a "bottom-up approach" (which is characterized by participation, co-determination and self-organization processes) so that complex cooperation and network relations arise.

Therefore shaping a sustainable information society primarily means searching for organization patterns of a modern society "that are suitable to master the ecological and social side effects of modern industrial society by resorting to the facilities of new information and communication technologies (I&C)" (Schneidewind 2000: 17). Below, computer-supported mediation (online mediation) is presented as a new form of knowledge management, or in other words: as a "means of organization" (LENK 1976) in an emerging digital administration.

## Mediation

Changing from hierarchy to cooperation, networks and self-organization also increases the risk of conflicts. Handling conflicts constructively and finding consensual solutions will be the decisive challenge. Therefore, discussions and

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[3] Cf. Rittel 1972, Selle 1996

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discourses should be organized and used productively for making participants to focus on arguments, exchange of knowledge and negotiation of solutions.

In this respect, mediation is gaining importance. With the aid of a neutral person – the mediator – negotiations are moderated between the conflict parties for reaching optimum solutions (Fietkau & Weidner 1998, Zilleßen 1998, Fietkau 2000). Usually problem solutions and consensus building are hardly based on interest-based bargaining, but much more on overcoming viewpoint-biased knowledge processing and on an increase of knowledge on the part of the participating actors (Fietkau 2000).

In mediation procedures, conflict exploration is followed by a creative search (brainstorming) for possible solutions which are acceptable for all parties (because their interests are considered to an at least acceptable degree). Such solutions can be found if the conflict parties have built up a so-called shared knowledge base and have integrated information of other interest groups into the personal experience context. Thus, mediation is a tool for a consensus-oriented learning process which leads to a mutual understanding via a *common knowledge construction* and which therefore can be referred to as a particular form of knowledge management.

Even though mediation may be an interesting solution strategy in most different conflict situations and in almost all spheres of the society, public planning and decision processes are of special relevancy to shaping a sustainable society, since, from an institutional point of view, they give rise in particular to three problem dimensions which might prevent or obstruct a sustainable development being shaped (Schneidewind 2000: 19ff.):

- missing knowledge for identifying problem situations;

- missing or too minor participation and self-organization;

- missing strategies for evening out and solving conflicts.

Therefore the preparation of participation, planning and decision making requires new procedures such as mediation to make the knowledge distributed over many actors visible and to network it so as to develop a common understanding. That covers both urban and regional planning procedures in which the distributed knowledge of heterogeneous actors is to be integrated into public decision-making processes, and participation procedures which deal with concrete life space and life style development (Müller-Christ 1998). This also includes processes of a local Agenda 21 which attempt to meet contents-related requirements of Agenda 21 at a local level by means of organization and communication forms aiming at the participation of the citizens (de Haan et al. 2000). The actor approach of Agenda 21 requires that all local pressure groups be  involved in these processes with *administration* having again a central and initiating function.[4]

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[4] Agenda 21, Chapter 28 says: "Each local authority should enter into a dialogue with its citizens, local organizations and private enterprises and adopt "a local Agenda 21".Through

## Online mediation

The paradigm of public administration changes increasingly from a "service community" to a "citizen community". For emerging e-government, it is not sufficient to merely provide the citizens with simple services via network if the public administration wants to play an active role in shaping a sustainable society. Therefore, a digital administration should provide network-based platforms and initiate adequate *procedures,* such as computer-supported mediation. Or conversely: The performance of participation procedures also requires the integration and use of network-based I&C technology as an organization option of the e-government.

In addition, available procedures and tools of citizen participation[5] show structural weaknesses that are in particular due to the fact that an effective and intensive participation is restricted to few actors. In mediation procedures, this will lead to mediation problems between the inner circle of active participants and, on the one hand, the outside groups and actors (the "observing" public) who are excluded from the procedure as well as, on the other hand, the middle circle of those represented by the participants. The potential of complexity handling (Märker 2000) or the reflexivity level in accordance with Schneidewind (2000) is restricted or can be improved only by high organization and time cost. Whether I&C technologies only complement and improve mediation or, in addition, also enable completely new qualities in accordance with the knowledge management outlined above, is (still) an open question. It is likely that both loss of quality and gain of quality will occur and that the advantages and disadvantages of using I&C technology for the implementation of computer-supported mediation have to be considered from the viewpoint of the relevant case before setting up more general guidelines. There is a great demand for empirical research.

From conceptual point of view, there is also little knowledge about how to use groupware systems for knowledge and conflict management in an e-government. Therefore, knowledge about how to advance available software tools is missing as well. Consequently, there is a demand for research in two respects: Both procedures and correspondingly adapted software tools have to be developed. The following research areas have to be studied and the following questions have to be answered:

- **Discourse types** - which types of discourse are to be distinguished in computer-supported mediation: creative discourses searching for new solutions, consulting, information-mediating discourses? Which forms of the

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consultation and consensus-building, local authorities would learn from citizens and from local, civic, community, business and industrial organizations and acquire the information needed for formulating the best strategies"
 (http://www.un.org/esa/sustdev/agenda21chapter28.htm).

[5] e.g. round tables, planning cell, advocacy planning, future workshop, workshop planning etc.

communication modes arguing and bargaining (Prittwitz 1996) are to be considered in the mediation process? How to organize decision making? How to structure knowledge, discourse subject and communication in each case, what are appropriate rules of discourse and procedure?

- **Imbedding in action contexts** (contextualization) - How to organize online mediation to achieve an adequate portfolio between face-to-face and computer-mediated communication? How to organize the transfer between these two communication modes and which functionalities have to be provided? How to interconnect discourses and discourse subjects, for example, as annotated documents, plans or maps?

- **Role-specific needs** - How to consider the role-specific needs of the actors involved (to be involved) in the conflict - which procedural structure and functionalities are required (e.g. moderators, mediators, representatives and organizations represented by them, participating and "observing public")?

- **Discourse cultures** - To what extent can an existing balance of power become relative through discourse rules and models (computational dialectics)? How to optimize networking and generating knowledge of heterogeneous actors with regard to the forming of opinion and influence, confidence (building), credibility, objectification and reliability (e.g. observation of time schedules, targets, decisions) by means of computer mediation? Does online mediation require a new rhetoric (Lüer, Splittgerber 2001)?

- **Complexity handling** - How to ease complexity handling through splitting and combining discourses, inquiries and evaluations, surveys and summaries and how to support it by measuring and visualizing progress?

- **Knowledge as an action resource** - How to support the generation of knowledge about requirements, possible compensation, priorities, interests, needs and cost incurred for conflict parties if they give way in accordance with Rubin et al. (1994) ? How to optimize the generation of knowledge about the subject of conflict/ state of affairs, the development of a common problem view?

Therefore the problem to be solved is the development of *socio-technical systems* that allow information and knowledge to be networked and newly generated. To what extent these systems are (can be) used for problem solving in accordance with a sustainable development remains to be seen and will depend on the handling of the outlined problem areas.

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