Early Lessons from the Application of Process Technology to Online Grievance Mediation

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ABSTRACT
In this paper, we report early lessons learned from a new project to understand how Online Dispute Resolution (ODR) can improve efficiency, effectiveness and fairness in Government dispute resolution and how ODR systems can gain acceptance.

Categories and Subject Descriptors
K.4.3 [**Organizational Impacts**]: Computer-Supported Collaborative Work

General Terms
Experimentation

Keywords
Online Dispute Resolution, Process Technology, Participatory Design, Grievance Mediation

1. INTRODUCTION
We have taken on the challenges of understanding how Online Dispute Resolution (ODR) can improve efficiency, effectiveness and fairness in Government dispute resolution and how ODR systems can gain acceptance. Both goals are critical to the establishment and maintenance of trust between disputants and with third party mediators. We hypothesize that the key to developing that trust will be to design, analyze, implement, deliver, and modify efficient, effective and fair dispute resolution processes. We have begun merging powerful process definition and analysis approaches into participatory computer systems design methods. These we have begun to apply our work to the grievance mediation services offered by the U.S. National Mediation Board (NMB) to the United States' airlines, railroads and the unions representing their employees. This paper presents some of our early lessons.

2. The NMB and its approach to Grievance Mediation
The NMB, established by the 1934 amendments to the Railway Labor Act of 1926, is an independent agency that helps facilitate harmonious labor-management relations within the nation's railroads and airlines. NMB programs provide an integrated dispute resolution process including mediation processes aimed at prompt and orderly resolution of grievances. Grievances are disputes over the interpretation or application of existing agreements. NMB has been a leader in exploring new grievance mediation processes. Central to its effort is an Interest-Based Grievance Process - a joint problem-solving process which explores the interests of both sides and outlines options. Resolutions are achieved by consensus. This keeps the focus away from the people or the past, and discourages preconceived solutions.

Our challenge is explore ODR as a mechanism for supporting labor grievance mediation. To achieve this goal we must find insertion points that honor the intent of the current informally-defined process and provide enhancement to its approaches and values.

3. Our Approach
ODR exploits computer networks and computer-based processes to support the third party in disputes [1]. It brings information tools and resources to the support of the third party by efficiently and effectively helping to shape and manage the flow of information and communication between the disputants and the third party, while also protecting privacy and assuring security. In doing so, it can engender increased feelings of fairness, which leads to increased trust.

We hypothesize that we can enhance the trust-engendering properties of the ODR system by building on process technology. We view ODR as a complex process, whose clear, precise, and complete definition will pave the way for development of efficient, effective and fair ODR systems. Considerable research has focused on developing languages and formalisms to define processes completely, precisely, and clearly. This earlier work suggests that process definition languages must incorporate facilities for the specification of such semantic issues as exceptions, agent responsibilities, data flow, and real time constraints. This past work forms a solid basis for studying what

must be changed or added to meet the challenges of ODR for grievance mediation.

We also go beyond modeling and verifying the ODR processes. The complexities of gaining adoption for digital government have been recognized by groups inside the government such as the OMB [2]. We are structuring our experiments in ODR development around the activity of process design using the Process Technology embedded in participatory design methods, such as Joint Application Development (JAD). This design method is aimed at bringing stakeholders into the design process.

4. EARLY LESSONS

4.1 Online Dispute Resolution

Initial work has confirmed our assessment that government agencies are highly interested in understanding how technology can be employed to further their dispute resolution processes. Dispute resolution is a core function of most government agencies and technology can both improve accessibility to such systems and the efficient functioning of such systems. By mapping the dispute resolution processes as described below, we have been able to identify how third party neutrals currently employ non-electronic media and how new tools might supplement or replace current approaches.

4.2 Process Modeling

Our work on developing process definitions has begun with activities aimed at understanding existing NMB mediation practices and processes. Through reading existing informal process descriptions, and increasingly in depth interactive conversations, we have developed a set of process definitions. These definitions are expressed in our Little-JIL process definition language [3]. The definitions include a definition of the highest level overall NMB mediation process, which is broad, but lacking in specific details, and some lower level definitions that start to provide the specific details that are needed in order for us to understand how these processes really work and where computer assistance might be of most value.

In this work we have demonstrated that a detailed, articulate process definition language is an effective vehicle for drawing out of process participants critical details that have previously tended to be unstated. Thus, for example, our Little-JIL language emphasis on such issues as exception management and agent participation have caused NMB personnel to begin to provide specifics about the processes that they use when mediation activities must necessarily diverge from the nominal. These details often include precise specifications of which agents assume responsibility for which of the many low-level tasks.

The elucidation of these details is proving to be useful to both the NMB, and to process definers.

4.3 Process-Technology Based Participatory Design

Long-standing communities often have processes their members are loath to abandon without the concurrent influence of many forces. The NMB community's dynamics appears similar to those in government environments where digital government has been slow to take root. The scientific community study of technology adoption describes the requisite forces with names like Performance Expectation, Effort Expectation, Facilitating Conditions and Social Influences [4]. Our early impression is that it is possible with ODR at NMB to control these forces.

As we have noted, our modeling and analysis has shown us opportunities in the existing non-electronic processes for interventions that can improve performance. Existing group collaboration software points the way towards meeting the particular needs of the NMB community with low effort software. NMB is prepared to establish the support necessary to facilitate ODR usage. The success NMB has had in establishing itself as a trusted third party in the U.S. transportation community and its highly visible support of our research effort encourages us to hope that the U.S. transportation community will be enthusiastic about trying ODR methods. In fact, many companies and unions have agreed to participate in our experiments.

To confirm our beliefs, we have designed surveys, interviews, group requirements gathering meetings, and software reviews that will regularly elicit NMB and their communities' guidance at low effort. All of these activities will be carefully measured beginning with a survey of existing attitudes and ending with measurements of effectiveness, efficiency and fairness of mediation with ODR,

5. NEXT STEPS

We are currently completing our detailed models of non-electronic NMB mediation process. We will next send out surveys to participants to establish existing beliefs and attitudes. The first NMB community interviews and group design meetings are set for early summer. Our first software release will be in place in the Fall. We hope to be gathering data from use early next year. Once we establish our results we will begin another cycle of requirements gathering, design and release.

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