

Process Technology for Achieving Government Online Dispute Resolution¹

Ethan Katsh, Leon Osterweil, Norman Sondheimer
University of Massachusetts Amherst

1. The Challenge

We have taken on the challenge of using process technology to help create Government Online Dispute Resolution (GODR) systems. The creation of even straightforward digital government applications has lagged parallel developments in e-commerce, due in part to the stringent requirements we place on digital government and to the requirements for collaboration among all stakeholders our system of government imposes. Our premise is that to meet these requirements and overcome resistance to change we must focus on establishing and maintaining trust in all stakeholders. We envision that the development of digital government systems will be viewed as the design, analysis, implementation, execution, and modification of efficient, effective processes with stringent fairness requirements. We are merging powerful process definition and analysis approaches into participatory design methods to overcome resistance to change in order to create digital government systems that are efficient and effective and also convey a strong sense of fairness leading to a high level of trustworthiness.

We are demonstrating our approach through the domain of dispute resolution. Efficient, effective and fair dispute resolution can do much to restore trust in government, even after other transactions may have been problematic. Poorly done dispute resolution can, on the other hand, destroy trust in government.

2. Our Approach

We are carrying out a computer science and software engineering effort, featuring the use of process technology research, and informed by organizational behavior research, to develop and evolve GODR systems that engender stakeholder trust.

Government Online Dispute Resolution (GODR): A recent survey found that over eighty Federal agencies had dispute resolution programs. The Federal government, during the last decade, has mandated that its agencies use alternative dispute resolution (ADR) methods to resolve disputes. As a result of both Congressional and Presidential action during the 1990s, federal administrative agencies are required to use non-adversarial means of dispute resolution whenever possible. In 1998, President Clinton created the Interagency ADR Working Group with a directive that “as part of an effort to make the Federal government operate in a more efficient and effective manner, and to encourage, where possible, the consensual resolution of disputes ... each Federal agency must take steps to ... promote greater use of mediation, arbitration, ... and other alternative dispute resolution techniques.” This project provides a strong response to that directive.

GODR exploits computer networks and computer-based processes to support the third party in disputes. 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 engenders increased feelings of fairness, which leads to increased trust. This thrust of our project is to evaluate the hypothesis:

Hypothesis 1) GODR can improve efficiency, effectiveness and fairness in government dispute resolution.

¹ This material is based upon work supported by funds the National Science Foundation under Grant No. EIA-223599. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the authors and do not necessarily reflect the view of the Commonwealth of Massachusetts or the National Science Foundation.

Process Technology: Successful pursuit of the preceding thrust requires research in order to build upon and improve process technology. We view GODR as a complex process, whose clear, precise, and complete definition will pave the way for development of efficient, effective and fair GODR systems. Our experience is that it is surprisingly difficult to define complex processes, such as GODR completely, precisely, and clearly, as these processes involve complex systems of people, organizations, databases, and legal constraints. Because of this, 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 clear and precise 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 GODR.

Our previous research has also entailed increasing trust in processes by subjecting them to rigorous and definitive analysis leading to proofs of key properties needed as the basis for trust. Our past work indicates that definitive process analysis must ultimately depend upon the rigor of the language in which the processes are defined. For this reason we are defining digital government processes in a language with rigorous formal semantics, thereby rendering the processes susceptible to analysis by tools that can verify properties critical to engendering trust. In particular we are extending and applying existing analysis and testing techniques to the GODR processes that we are defining in order to determine if properties that are critical to improving trust are met. Thus, this research thrust is studying the hypothesis: **Hypothesis 2) GODR processes can be represented clearly, completely, and precisely, enabling their objective and definitive evaluation by rigorous analyzers.**

Stakeholder Process Design for Digital Government: Our third research thrust explores how to overcome stakeholder resistance by appropriately securing the active and effective participation of all relevant stakeholders in the specification and design of GODR processes. The complexities of designing and implementing processes in the governmental sector has been recognized by the GAO as a problem of “collaboration”, by OMB as a problem of “Resistance to Change”, by the NSF National Center for Digital Government as the need for research on “Change, Transformation and Co-Evolution”, among others. The number and variety of stakeholders, political considerations, and budgetary vagaries in the governmental sector all add to conflict, competition, and distrust. Distrust extends beyond human distrust of computer software supporting even mundane government functions. We are restructuring the process of GODR development around the activity of process design using the Process Technology produced in exploring Hypothesis 2 and embedding the use of these techniques in participatory design methods can address distrust. These methods, generally known as Joint Application Development (JAD or Participatory Design (PD) are aimed at bringing stakeholders into the design process. In achieving this embedding, we are incorporating incremental development, teamwork, and organization behavior theory to improve this process-oriented JAD and PD. This will allow us to explore the following hypothesis: **Hypothesis 3) Process Technology-based participatory design methods can improve efficiency, effectiveness and fairness in the design of GODR processes.**

3. The Experiments

The project focus is on grievance dispute resolution processes used by the National Mediation Board (NMB). The experimental creation and use of GODR are being carried out in collaboration with NMB and its stakeholders in the Air and Rail Industries. The project is carrying out as the iterative development and evaluation of a GODR Interest Based Bargaining process based upon the IBB process currently used by NMB. Each iteration consists of a specify-design-build-run/evaluate sequence. Each sequence has a specific research and learning objective, and each is contributing both an improved GODR process, and improved understandings of the strengths and weaknesses of the underlying process technologies.