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Designing an Accessible, Technology-Driven Justice System: An Exercise in Testing the Access to Justice Technology Bill of Rights

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DESIGNING AN ACCESSIBLE, TECHNOLOGY-DRIVEN JUSTICE SYSTEM: AN EXERCISE IN TESTING THE ACCESS TO JUSTICE TECHNOLOGY BILL OF RIGHTS

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Abstract: The Access to Justice Technology Bill of Rights project, sponsored by the Access to Justice Board of Washington State, included a committee composed of attorneys, judges, technologists, and librarians charged with envisioning an ideal civil justice system. Our goals were to design a system with certain core values (e.g., due process and access to justice), test the system using a complex family law scenario, determine what opportunities technology brings to the table, and identify what barriers technology creates for persons using the system. This Article describes an idealized civil justice system (System) unlike anything that presently exists. The System is composed of people and technology that together provide a factual information-delivery system, an advocate, an adversary, a mediator, an adjudicator, and a proactive enforcer. To be successful, our System needs to use a wide variety of current and next-generation technologies and processes. The System gives the participants in a legal issue the opportunity to resolve their issue by themselves before escalating the issue for mediation or adjudication. In addition, the System plays an active role in the enforcement of whatever resolution is reached. At the core of the System is a cycle in which all participants simultaneously review and choose options. The interaction of all the participants choosing options allows the System to converge to a mutually acceptable resolution of the issue.

I.   INTRODUCTION

What if twenty years from now you were founding a new country and you were assigned the task of designing its first civil justice system? What if you were not limited to developing a traditional adversarial justice system? Suppose the system could use any technology that is currently available but had to maintain these core values:

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Availability of the system to all people regardless of their income level, prior experience, education level, and cultural background;

Fairness of the system to all participants;

Confidentiality of the system and protection of participants' privacy rights;

Ability of the system to reach a resolution that maximizes the interests of all participants; and

Openness of the system to scrutiny by the public.

What would your justice system look like? The Opportunities, Barriers and Technology Subcommittee of the Access to Justice Board, composed of knowledgeable technologists, attorneys, librarians, and judges, explored such a system. Our goal was to design a system, then test it using a complex family law scenario. In our work, we sought to determine the following:

What process our proposed system might use to elicit just resolutions of civil issues?

What opportunities technology might offer?

What barriers to justice the system might create for the people who use it?

The new civil justice system (System) we designed is unlike anything that presently exists because of the iterative and escalating process it uses. In the System we envisioned, participants are in a continual cycle of review and decision. They review the background of their case and the options that are currently open to them, and then decide on what their next step might be. If two participants can resolve their issues in this way without intervention, they have no need of lawyers and judges. If they cannot resolve their issues in this way, the System provides the ability to escalate the issue through a mediator and then finally through an adjudicator. In addition to providing this escalation, the System serves alternatively as a neutral information-delivery system, advocate, adversary, unbiased decision-maker, and proactive enforcer.

This Article describes the new System we envisioned in the context of a family law scenario to be resolved within the System. We discuss the issues raised by the use of the System's technology and describe the base technologies envisioned. We then describe the opportunities and barriers inherent in the System and present suggestions for avoiding or minimizing them.

The Access to Justice Technology Bill of Rights Process is designed to do more than come up with a set of rules for technology in the justice system—it seeks rather to suffuse the justice system with a set of values that will guarantee that technology will always be used to increase rather than limit access. Perhaps the greatest challenge is to find a way that will stand the test of the long term, take advantage of all the opportunities, and be a tool to resist all the dangers presented by the inevitable multiple and unforeseeable changes in the technological environment.

A multi-disciplinary committee of judges, lawyers, technologists, and lay people worked throughout 2002 and 2003 to create a test bed for this endeavor. Their idea envisioned a civil justice system that took advantage of every technological opportunity and refused to be constrained by the status quo or current processes. The fundamental requirements of due process, access, and the realistic potential of foreseeable technology were the only real constraints. It is hoped their product will illustrate the potential of technology to empower access; provide a yardstick against which innovation can be judged; and highlight the areas of danger in the deployment of technology, areas that the Access to Justice Technology Bill of Rights must be strong enough and broad enough to protect against. The group articulated the fundamental requirements of due process as "an easy path to interactions where a person's legal concerns, needs and/or rights are properly presented, listened to, given meaning and dealt with impartially and carefully."

We assumed the lawmaking body would be separate from the civil dispute resolution system, and that all changes in substantive and procedural laws and rules would be immediately incorporated into the system. Furthermore, we anticipated that the lawmaking body would have access to the System and the results it produced. Legislative decisions would be enhanced by the feedback the System would provide.

II. OUR SCENARIO: THE RODRIGUEZ FAMILY[1]

Mr. and Mrs. Rodriguez were married seven years ago. Mrs. Guadalupe (Lupe) Rodriguez is a monolingual, literate Spanish speaker who now seeks divorce from her husband, Eduardo. Eduardo is illiterate in Spanish and English, but speaks both languages. The couple's children, Maria and Diego, have been living with their mother since the

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1. The names used are fictitious. Any resemblance to a real family is unintentional.

couple separated eight months ago. Eduardo has spent a great deal of time with the children, before and after the separation.

Financially, the couple is struggling. Eduardo works full time and Lupe is on public assistance. The couple has significant credit card debt and is two months behind on the rent on the family home where Lupe and the children still reside. The landlord has threatened eviction.

Both parties want custody of the children, child support, and the family home. Lupe is seeking payment of outstanding bills. Also, Eduardo has accused Lupe's brother-in-law of abusing his children.

The participants in this issue include:

Eduardo and Lupe Rodriguez;

The Department of Social and Health Services, which provides public assistance and may investigate the claim of child abuse;

A guardian *ad litem* assigned to advocate for the best interests of the children;

The children's school, which was notified of the couple's pending divorce and custody dispute;

The credit card companies to whom the couple owes money;

The landlord to whom the couple also owes money; and

Community interests, such as the media and the general public, who, respectively, may seek access to public information and accountability of the System.

Each of these participants has some stake in the issue posed and so has some right to information regarding it and a right to some input into its eventual resolution.

III. ASSUMPTIONS BEHIND THE SYSTEM

With this scenario and key players in mind, the subcommittee envisioned a System to help the parties resolve their problems in the most just and efficient manner possible. The following subparts detail the initial constraints that we put on this new System. In forming these constraints we sought to look beyond the current structure of the United States legal system to find instead the motivations behind its concept of justice.

A.   The Core Values

There are basic core values supporting any system of justice. For our System, we sought to design an easy path to interactions where a person's legal concerns, needs, and rights are properly presented, listened to, given meaning, and dealt with impartially and carefully. Thus, in keeping with its charge, the committee assumed the System must provide opportunities without presenting barriers to access.

We agreed that the System must employ the best balance between people and technology. Where judgment is concerned, it must employ qualified people. Where information processing, record keeping, communication, or other important but non-cognitive processes are concerned, the System ought to rely on technology. Thus, the proper system augments human judgment with sophisticated automation so that judgment may be applied as effectively as possible.

B.   System Roles

We recognized the following types of roles or personas that the System would need to fill in order to completely serve the needs of the participants in any issue:

Neutral Information-Delivery System. At many points in the resolution of an issue, participants simply need information without any added perspective, opinion, or value judgment. For example, Eduardo may simply need to know the total amount of back rent that the landlord feels is owed.

Advocate. At some points, the System must advocate for the needs of a particular participant. For example, the System should help Lupe construct her arguments in favor of her getting custody of her children. The System is not intended to replace human advocates. If Lupe has a lawyer, the System should, in fact, facilitate their interactions.

Adversary. When presenting the views of participants that are in disagreement, the System may appear to take an adversarial position. For example, the System may report, against Lupe's wishes, the alleged abuse by her brother-in-law.

Unbiased Decision-Maker. In presenting options and in any mediated or adjudicated decision, the System must take on the role of a disinterested authority. For example, if the parties reach

adjudication and custody is awarded to Eduardo, then the System must deliver this decision with unbiased authority.

Proactive Enforcer. Once a resolution has been reached, the System must help uphold that resolution. For example, if custody is awarded to Lupe, the System must then appear to Eduardo as a law enforcement official.

The committee recognized that participants must at all times be aware of what role the System is playing and that those roles must never become confused in the participants' minds.

C.   The Idea of an Issue

We devised the idea of an issue to cover the wide range of scenarios that the System may need to work through. An issue is very likely to be a complex set of interrelated sub-issues. For example, the summary issue in this scenario is the custody contention between Eduardo and Lupe. Clearly that is not a single issue, but rather a congregation of issues including, but not limited to, child-abuse, rent collection, and school attendance. Each of these issues, in turn, may be composed of its own set of sub-issues. The System must be capable of tracking and interrelating these sets of issues so that as each is resolved, its solution feeds into and helps to guide the remaining issues toward resolution. For example, if the allegations of child abuse are shown to be valid, then the impact of that resolution will need to be felt throughout the rest of the System. Options that were once available may no longer be and new options for resolution of other issues may appear.

Consequently, participants are linked together in the System by being parties to an issue. Issues can have any number of sub-issues, each with its own set of participants. Resolution of the top-level issue is contingent upon resolution of its sub-issues. When all the sub-issues are resolved, the main issue that originally brought the participants to the System can be resolved as well.

IV.   THE SYSTEM AND ITS STAGES

The core solution is a four-stage process. While it resembles the current legal system, it is actually very different because of the technology used to manage the interactions within each step, the way decisions are made within each step, and the manner in which the case moves from one step to another. These stages will be explained in detail using the hypothetical scenario.

Participants need to move from initial contention to final coordination on the resolution of their issues. The System has a series of possible stages that take participants from their initial contact with the System to final resolution of their issues:

Start-up, where participants first make contact with the System;

Interaction, where the participants try to resolve their issues without outside intervention;

Intervention, where the participants are helped, more and more proactively to reach resolution if they cannot reach it alone; and

Compliance, where the resolution is put into effect and the participants adhere to it.

A. Stage One: Start-Up

For the System to be of value, each participant must be aware of its existence, have relatively easy access to it, and have assistance available when necessary. How do Lupe and Eduardo know that the System is available to resolve their problems? How do they interact with the System given their language and literacy barriers? In particular, we concluded that these factors are essential to the start-up process:

Awareness, how members of the public are made aware of the existence, purpose, and functions of the System;

Outlets, how persons can contact the System;

Intermediaries, persons who assist individuals unwilling or unable to use the technology; and

Initiation, how interaction is begun between an individual and the System.

1. Awareness

Public awareness of the System must be pervasive. Publicity of the System might involve:

Television commercials, which present typical legal problems and an example of successful resolution using the System;

Billboards in multiple languages advertising the location of points of access to the System; and

Outreach to community leaders including religious, educational, political, and social leaders to enable them to make their constituents aware of the availability of the System. This

outreach may include appearances by people who have successfully resolved issues using the System.

The message delivered should reinforce the core values of the System. In our scenario, we assume that Lupe first heard about the System from a friend at church. An intermediary gave Eduardo notice that Lupe initiated an issue and advised him of how to interact with the System.

2. Outlets

The System is designed to be accessible to anyone. Fundamentally, that means that the System cannot be a typical computer program that requires special knowledge to be used. What differentiates those who use the System is their level of comfort and direct interaction with the System. Some people will be able to access the System directly and take personal control of their interaction with it. These individuals will be able to access the System through any networked computer without the need for assistance from intermediaries.

Others, like Eduardo and Lupe, will need or want an intermediary to assist them to work through the System. These participants will access the System in a public (e.g., public library) or private (e.g., church) outlet where a trained System intermediary will guide them through the System. Thus, regardless of a person's training or experience, the System will be fully available to them.

3. Intermediaries

Three types of people stand between participants and the System. The first is an appointed agent of the System. These people are empowered to officially represent the System to participants. For example, in the case where notice needs to be served to Eduardo (who is illiterate), an agent would be appointed to deliver it verbally and to advise Eduardo of his options. Agents provide the most accessible level of interaction with the System. They are multilingual and trained to effectively communicate a person's legal responsibility to interact with the System and the options that person currently has for interaction.

Agents are officials of the System. The other two types of intermediaries are not. Information professionals help people contact the System and communicate with it. Attorneys and other legal professionals provide advice on what options participants ought to pursue.

Information professionals guide the participant to the proper place in the System and leave it to the individual to decide what action to take.

They do not interpret the information the System provides or give advice on what are the best options.

We imagine that information professionals (hired by the state or by public access organizations) will be located in a variety of locations including:

> Government buildings such as libraries, post offices, and courthouses;

> Community centers, churches, and other civic buildings; and

> Public legal services offices where navigation services are provided by intermediaries. Attorneys may also be available to provide advice.

We foresee that private System intermediaries will be available to provide fee-based services. Private System intermediary offices will offer premium service and value added features, such as social service referrals and additional proprietary information to form the basis for charging a fee. Private intermediaries may also be employed by larger organizations to assist their employees.

Legal professionals may serve as information professionals, but their focus is on advice rather than access. We envision, for example, that law firms would provide both access to the System and advice on what options to pursue. So, in the System we envision, legal professionals provide much the same service as they do today. However, their services would be centered more fully on advice about the various options presented to a participant because much of the organizational and administrative interactions would be handled by information professionals.

4. Initiation

We envision two ways a person may initiate interaction with the System: (1) a non-official mode where the individual merely wants to experiment with certain scenarios and (2) an official mode where the individual wants to initiate use of the System. The official mode will also include those persons drawn into interaction with the System by action initiated by someone other than themselves.

Non-official mode is a way that individuals may learn how to use the System and become comfortable with it. Those individuals who want to understand how an issue may play out, get familiar with an issue, or just learn about the System, may use the System in non-official mode. In this mode, all information is anonymous. They may also familiarize

themselves with how the issue that they are actually immersed in may be resolved in order to assist them in forming their own personal strategies and to chart probable outcomes. The individual may set up the issue in a variety of ways and track the ramifications of certain actions on his or her part. The individual can then "undo" options and attempt to play out the issue in another manner. The non-official mode allows the user to involve as many players as desired.

Official mode is used when a person wants to initiate action on a real issue or has been drawn into the System by being named in an issue by someone else. In official mode all participants are required to be identified. However, their identity will only be revealed to other participants on a need-to-know basis. Only the minimum amount of personal information necessary for a participant to exercise her or his options within the System will be available. Once options have been exercised there may be binding consequences to that participant. Certain choices will have time limits with penalties for not responding within the prescribed period of time. Participants will be bound to follow the process through completion.

The church's computer put Lupe in contact with the System, and she spoke in Spanish to an information professional who guided her through the initial process. After exploring her options with the intermediary, she chose to begin the divorce proceeding. A System agent contacted Eduardo at work and gave him notice of Lupe's action and explained his options.

B.   Stage Two: Interaction

Within the interaction stage, the System we envisioned uses a repeated cycle to move participants as quickly as possible toward resolution of their issue. Once initiated, an issue enters the spiral of resolution—notice, exploration of options, exercising options, and feedback:

> *Notice*, where participants are told the current status of their issue and given a set of options to move the issue forward;

> *Exploration of Options*, where participants educate themselves on the options, play out the possible results of their options, and decide what option to take;

> *Exercising Options*, where the participants choose an option; and

Feedback, where participants are told of the options exercised by other participants and what that means to them.

Feedback leads to further notification when new options become available due to the choices participants have made. This process is illustrated in the following diagram:

Diagram 1: The Spiral of Resolution
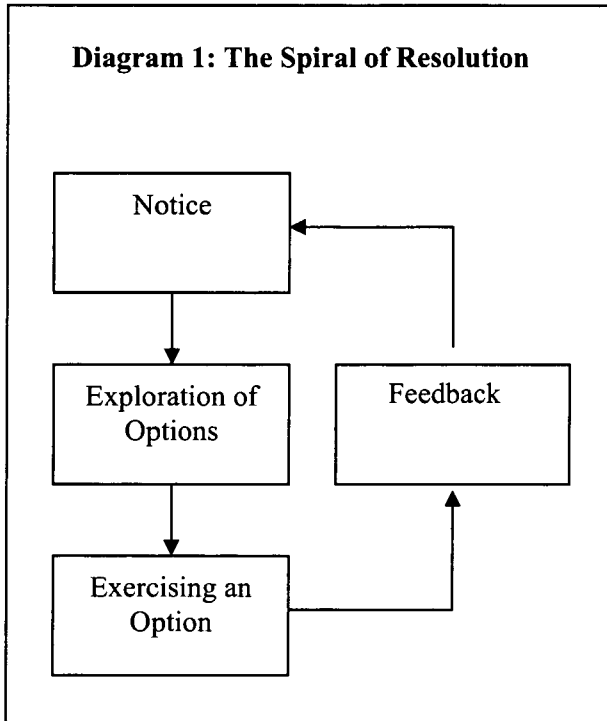
The System is spiral in nature. As participants get notice of an action, they explore and then exercise an option. After they act, other participants receive notice, explore, and exercise further options in response. If all goes well, the process converges on a resolution that represents the best fit between the desires of all parties. If the participants reach an impasse, the System escalates to a more proactive stance (mediation and then adjudication) to move the issue forward towards final resolution.

The success of this methodology rests on the System's ability to determine all possible options at any point in an issue and to effectively present them to each participant. We believe that it is not feasible to

begin by creating some enormous logic of options that covers every possible legal issue. Rather, we believe that the System would begin with a limited logic that augments the judgment of options of a trained judge or other official of the System. However, if the System is built to consistently learn from these officials, then over time the logic of options will become more and more robust. In the long run, only those situations that are truly new or extremely complex will require human judgment. Similarly, the effective presentation of options and the background information needed to explain them will grow as the System learns from and reiterates the human decisions made over time.

1.   Notice

Notice is the way the System communicates options and background information. Notice:

> Has basic information about the issue, the initial options available, and the resources available to understand and evaluate the options;

> Is sent in different modes depending upon the needs and abilities of the recipients of the notice (e.g., electronically, on paper, verbally, in English, or other languages);

> Is sent to all participants. Participants are those people who can exercise options. Participants may be named in the issue (for example, Lupe names Eduardo), or unnamed (for example, the landlord has collection options that can be exercised even though not specifically named by Lupe); and

> Is sent to interested parties. Interested parties do not exercise options but still need to know about the issue. For example, a notice might be provided to the children's school, so that their teachers are aware of their situation.

2.   Exploration of Options

After notice is issued, participants may then start to explore their options. The options are those provided by the System. The System will provide current and relevant information to assist the participants in selecting a particular course of action. To explore options, participants may:

> Study the background information described in the notice. Background information can be delivered in the same modalities

as the notice itself (e.g., digitally, in print, or verbally in a variety of languages); and

Move into non-official mode to play out certain options. As discussed above, in non-official mode, participants can experiment with various options and see what the possible outcomes might be. The participants can run and store these simulations for later access.

In our scenario, Eduardo's first notice gives him information about the impact the divorce will have on his children. While experimenting with his option to give Lupe custody, he calculates the likely amount of child support he will have to pay. He decides not to contest the divorce, but to seek custody of the children. He also learns of the alleged abuse of the children by Lupe's brother-in-law and learns how to file a complaint with the state's Child Protective Services (CPS).

3.   Exercising Options

After participants have researched their options, they must exercise one. As with notices, they can respond in any mode. When the last option is exercised, the System moves into the compliance stage. In our scenario, Eduardo chooses to seek custody and file a CPS complaint; and the cycle of notification and exercising options will continue.

During the choice process, the System's main goal is a convergence of the options selected by all participants. In our scenario, a trivial convergence would occur if Eduardo assented to Lupe's request for divorçe and custody. Of course, such easy resolution can hardly be expected. Thus, the logic of options the System employs has the tough job of gently pulling the participants toward a convergence of interests without introducing any bias toward a particular outcome. Rather, the System seeks a "best fit or equilibrium" between the different actions of the participants.

In addition, the committee recognized these as key aspects of the System's behavior during the choice process:

No preset time constraints. The System has the capacity to wait for responses indefinitely. However, participants do not always have an unlimited amount of time to respond or arrive at a final resolution. The timeframe for participants to respond is determined by rules of civil procedure and applicable statutes. For example, Eduardo is advised that if he does not respond to Lupe's action within a certain timeframe, then Lupe will prevail

automatically. In addition, CPS is required to investigate Eduardo's complaint within a set amount of time.

Continuous education. The educational aspect of the System is continuous and remains active throughout the process. Whenever a participant has questions about procedure, substantive law, or the likely outcome if a particular option is chosen, the System is there to inform and educate the participant.
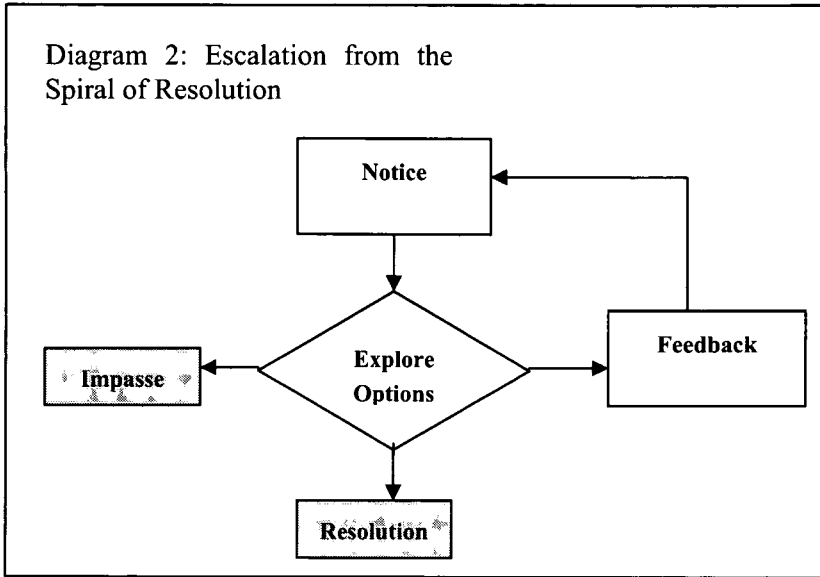
Complete issue histories. Throughout the process, the System logs responses and any other information that has been provided by the participants. Within privacy and security constraints, participants can always find and review this information.

Parallel processing. Participants simultaneously interact with the System. Unless the options of one participant are dependant on those of another, the System allows people to work at their own speed.

4. Feedback

The option selected by one participant becomes a source of feedback to others in the System. The participants affected are then allowed to explore their options and, in turn, exercise them to provide feedback to the other affected participants. In our example, Lupe, the school, and CPS are notified of Eduardo's decision to file an abuse complaint. As with e-mail, and other modes of asynchronous communication, each participant receives notice, acts, and awaits the next communication. All participants simultaneously receive notice, explore options relevant to them, and make choices that produce feedback for others in the System.

Simultaneously the System monitors the responses and checks to see whether convergence is occurring. If the System detects a convergence, it can then propose a resolution to the participants. If they agree, then they have achieved equilibrium and the System moves on to the compliance stage. If the System detects an impasse or deadlock, then intervention will be necessary. This process is illustrated by the diagram below:

Diagram 2: Escalation from the
Spiral of Resolution

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                        ┌──────────────┐
                        │    Notice    │◄──────────┐
                        └──────────────┘           │
                               │                   │
                               ▼                   │
  ┌──────────┐           ◇─────────────◇    ┌──────────────┐
  │ Impasse  │◄──────────│   Explore   │───►│   Feedback   │
  └──────────┘           │   Options   │    └──────────────┘
                         ◇─────────────◇
                               │
                               ▼
                        ┌──────────────┐
                        │  Resolution  │
                        └──────────────┘
```

In our scenario, after Lupe finds out the results of the CPS investigation, she may realize that Eduardo's behavior is justified. After both of them learn more about the impact of divorce on their children, they may take the option to reconcile and terminate the process. On the other hand, Lupe may decide it is in her children's best interests to continue to seek a divorce and custody of her children. If Eduardo continues to believe it to be better for the children to live with him, then an impasse has occurred, and intervention will be needed to move the process forward.

C. Stage Three: Intervention

The System is designed to provide all participants the information and options necessary for them to reach their own resolution. However, if the participants' positions are clearly defined, and the information necessary for a resolution has been presented without an agreed resolution, then the process is at an impasse. At that point, we envision the System breaking the impasse by either mediation or adjudication.

1. Mediative Role

If the participants cannot agree by themselves, then the System takes on the role of neutral mediator. As in all parts of the System, the mediator is a human augmented by an automated data processing and delivery system. The mediation process is governed by the following principles:

Questions on need. The System asks questions of the participants to find out what the participants really want or need. It gives them feedback and answers based on the answers to those questions.

Suggestions based on history. The System suggests prior acceptable agreements in other factually similar situations as ways to resolve differences.

Suggest terms. The System suggests prior terms that worked in other similar situations.

Advise about consequences. The System tells participants the consequences of non-agreement in other similar situations.

Information disclosure. When participants are given recommendations by the System, the data that the System's projections are based upon is shared with the participants.

Discretion. The human mediative aspect of the System allows discretion of the mediator to control whether to give data on outcomes to individual participants. In exercising discretion, the System will weigh the risks of incentive not to settle to determine whether releasing the information is likely to promote resolution or impasse.

Restriction. Part of the System's information will not be accessible to all participants. The System gathers some information that is used solely for mediation purposes.

Fair distribution of information. The System is designed to ensure that all participants have access to the same information and to complete information from the relevant sources.

Equal bargaining ability. The System prevents more forceful and capable participants from taking advantage of less capable participants, at an economical and emotional cost to the participants and others (particularly children).

In addition, voluntary resolution of problems is subject to the approval of the System whenever there is unequal bargaining power or

vulnerable third parties (such as children). This review is intended to prevent coercive and unfair resolutions. Thus, the mediative role of the System may act to ameliorate problems vexing the litigants as opposed to only being an impartial fact finder and independent decision maker.

In our scenario, the System uses a wide range of electronically gathered and analyzed information such as credit reports, bank records, and other financial information. In addition, information from the school system, CPS, and other state agencies is made available to Eduardo and Lupe to help them resolve their issues. Also, with the consent of the parties, hidden video can be used to assist the guardian *ad litem* to observe the interaction between the participants and their children. Finally, the System uses a database of prior issues with similar constraints to show the participants the most likely outcomes. Together, these tools give the System the authority and the information to help break the impasse. To play the System out to its conclusion, however, we assume that Eduardo and Lupe still cannot agree to a solution and an adjudicator must intervene.

2. Adjudicative Role

The System must be able to assume a more traditional adjudicative role. Despite the best efforts of the System as mediator, our committee recognized that the System's efforts will not always be successful. The System would use data of past decisions to determine the reasonableness of the current decisions and their impact on the participants. Like mediation, adjudication is a combination of human and automated processes.

Many financial issues may be automated effectively. When the objective evidence dictates a decision with a very high degree of certainty (such as child support) then the likeliest decision may be arrived at automatically. The legal ownership of individual property and the fair market value of the property, for example, can often be resolved through the use of technology or the information gathering that occurs prior to the participants reaching impasse. Furthermore, the System could automatically update financial orders such as child support, so that participants need not return to the System for routine updates. Even at an impasse, minor issues can be redirected to adjudication or mediation to ensure that the adjudicator only deals with those human issues that cannot be resolved through the use of technology or voluntary resolution.

Adjudicators can depend on the information already gathered by the System from all participants to considerably ease the fact finding that they do in the current legal system. In addition, a report could be provided by the System to the participants so they can see the consequences each factual finding has on the remainder of the process.

We envisioned that the System's ability to gather and verify information will have major impacts on the reliability, efficiency, and long-term stability of the System. System-gathered data is treated as presumptive rather than conclusive, with the strength of the presumption depending upon the nature and source of the information. In the System we envisioned, the role of advocates changes from mainly information gatherers to presenters who argue the implication of the information by reducing the need for discovery during the adversarial process. The System automatically resolves some issues and highlights those that need a human adjudicator. Advocates use the greater reliability of information that has been gathered by the System to become more effective. Discovery abuse is minimized and fairness is enhanced.

The adversary process that ultimately resolves issues that cannot otherwise be resolved is enhanced by de-emphasizing discovery. Furthermore, in the advocate role, the System can use technology to provide legal advice by remote access to court hearings by pro bono counsel for those participants who the mediative aspect of the System determines cannot make effective presentations during the adjudicative phase. The System can also allow participants to see the probable consequences of agreeing to settle at any point during the adversary process. The adjudicator will also have statistical information available on long term outcomes associated with each possible judgment. The System will strive to have the adjudicator impose a resolution in as few a number of issues as necessary, seeking voluntary resolution of most issues.

In our scenario, the System assigns an adjudicator to the issues facing Lupe and Eduardo. That person reviews the trail of events that have lead to the impasse. The adjudicator focuses on those issues that might break the impasse and allow the two parties to still reach agreement. Each of the parties has additional opportunities to argue their case to the adjudicator. After taking the previous interactions and the more recent arguments into account, the adjudicator decides to grant a divorce to the couple and award custody of the children to Eduardo. The adjudicator then sends the two parties back to the mediator to work through the issues of visitation and child support.

D. Stage Four: Compliance

Today's courts are not proactive enforcers of their decisions. Ensuring compliance today is dependent upon the prevailing party bringing non-compliance to the attention of the court before the court may take steps to ensure compliance. Other than automatic liens on real property in the county in which a monetary judgment is rendered, the courts do not actively enforce compliance; rather, they reactively enforce compliance.

The justice system envisioned by our committee involves a System that is proactive and self-executing when it comes to compliance with most resolutions, regardless of whether the resolutions are voluntary. Some of the tools we envisioned the System using to proactively ensure compliance were:

Reporting requirements. Participants against whom orders are imposed are required to report their own compliance or non-compliance to the System. Failure to report compliance creates a presumption of non-compliance. Information about non-compliance is then provided to the participants in whose favor compliance was ordered. Those participants are then asked whether they want compliance enforced. If they do, the non-complying participants are given the ability to rebut the presumed non-compliance after receiving notice using the same process described to resolve problems. It is at that time the non-complying participants are given the opportunity to explain.

Detailed order. Orders are detailed enough to inform participants of the consequences of non-compliance. For example, consequences of failure to exercise visitation rights may result in suspension of those visitation rights.

Reminders. The System reminds participants of the need to comply with its orders.

Resources. The System provides information and resources to enable compliance.

Voluntary modifications. The System allows the participants to voluntarily agree to modify compliance when necessary.

Outcome correlations. The System informs the adjudicator and the participants of correlations between early non-compliance and long-term consequences on the participants and third parties.

Information sharing. The System shares information about non-compliance with other government agencies.

The System we envisioned is more proactive in obtaining compliance of its orders and continues to educate the participants of the consequences of non-compliance to promote voluntary compliance with the System's orders.

In our scenario, the System advises the concerned third parties (the children's school, social services, media, etc.) of the parts of the decision that they are entitled to know. In addition, all of the forms necessary to finalize the divorce and custody issues are automatically assembled and delivered to the parties. Finally, the two parties are given a final notice that explains their options for modifying or appealing the decisions that have been made as well as a list of resources (information sources, public and private agencies, and so on) that can help them understand and comply with the decisions that have been made.

V.   THE TECHNOLOGY BEHIND THE SYSTEM

The Opportunities, Barriers and Technology Subcommittee brought together legal and technology experts to define the set of current and next generation technologies that might be part of the System we were envisioning. Those technologies are listed below. Because we were dealing with future, as well as present, technology, and because we were envisioning, rather than actually designing a system, we did not take the time to weave the technologies together into a coherent design. Rather, we simply defined the categories of technology that might be necessary and the kinds of technology that might appear in each category.

A.   *Input Technology*

The goal of our input technology is to allow any form of information (e.g., text, image, sound) to be sent into the System by any type of person. In other words, regardless of a person's technical literacy, he or she can still submit information to the System. In some cases, the System will employ so called "adaptive" technologies to assist people with no or limited sensory inputs to still interact with the System. In other cases, we expect intermediaries to work on behalf of non-computer literate participants to help them digitize print or spoken inputs. Intermediaries might use computer-based audio and text translators or technologies that help them understand the wider cultural context of their clients in order to help them interact successfully with the System.

B.   Output Technology

As with the input technology, our goal for output is that it be accessible to any type of person. Thus we envision that the System uses the most appropriate means of communicating. For example, it sends surface mail or e-mail, makes phone calls, outputs to computer screens, or prints materials. In the case of interactions with illiterate participants, the System provides materials that a human intermediary would pass on verbally.

C.   Storage Technology

How information is stored in the System will be critical to assuring that it can be input in all its forms, output in all its forms, and made available to the right people at the right time. To appropriately store information, the System uses the most advanced databases, structured content, and access technologies. Database technologies allow massive amounts of information to be efficiently stored and retrieved. Structured content technologies, such as XML, allow information, and the rules of its use, to be precisely defined. Finally, access technologies (e.g., indexes, taxonomies, cross references, thesauri, subject headings, and vocabularies) allow precise and thorough cataloging of information so that it can be found when needed.

D.   Processing Technologies

An essential feature of the System is process management. Given a set of rules of legal conduct, and a set of participants in a legal issue, the System orchestrates the actions of the players to be consistent with rules of conduct and to move toward a defined type of resolution. The System manages who will accomplish what tasks and at what time.

To accomplish this complex task, the System must first be able to read, interpret, and apply the rules of legal conduct. Just as importantly, however, the System must be able to teach each participant about the process he or she is to follow. The System must empower participants with information not only about the choices they face, but with the probable outcomes of such choices. In other words, the System is capable of recommending a hypothetical solution and then illustrating the probable consequences based on the choices that participants make.

Workflow tools more advanced than any currently available would be employed to manage this sort of process. A language of legal process in

which the logic of automated options for each type of legal issue would be developed. Finally, the feedback loop from human-generated options to the automated logic would be established.

Critical to the success of the System's scenario building software will be our ability to monitor the past choices that participants have made, and their outcomes, to provide reasonable projections of the future. So, for example, if a particular choice has led in ninety-eight percent of the past cases to a particular outcome, that fact ought to be available to people faced with that choice today. A wide variety of pattern-seeking and statistical analysis technologies would create this capacity.

E.   Connections

The System is connected to a large array of other systems to which it provides and receives information (social services, immigration, financial, educational, and many other information sources). The System is able to easily interact with these other systems while still maintaining confidential financial information and providing access to public financial information.

F.   Accountability Technologies

Within the rules governing privacy, the general public has access to the System in order to view information regarding the cases within it. The System is open to the public for review yet maintains individual's anonymity and confidentiality. In addition, the participants and the public submit evaluations concerning how they feel the System handles cases. The participants respond to System generated evaluative questions to provide constant feedback to allow ongoing improvements to the process.

G.   Privacy Safeguards

Safeguarding the privacy of information is a primary concern of the System. The System uses every available means to assure that only those authorized by the legal process can see a piece of information. There are two separate classes of technology involved in the creation of safeguards. First, there are the technologies that secure information. Encryption and authentication technologies are chief among the ways that information is made inaccessible. Second, there are the technologies that match a person to the information that he or she may access. These

technologies are built chiefly on access lists and rules processing software. The rules that are processed are, in this case, the laws that govern privacy and access.

In addition to safeguarding access, the System safeguards data from catastrophic loss. Thus, the technologies behind backups, self-correction, and fail-safe are also quite important to the System.

VI. SYSTEM DESIGN INSIGHTS, OPPORTUNITIES, AND BARRIERS

A. General Observations

1. The Changing Role of the Judiciary

Prior to the 1970s the primary job of the courts in the United States was to be finders of fact. The ideal was to be impartial and nearly devoid of intimate contact with and knowledge of litigants and their circumstances. Since that time, society and its institutions have had to deal with a drastically different definition of family. As the traditional family has become less common, institutions, particularly schools, have changed and expanded their roles. Rather than simply being educators, teachers, counselors, and coaches, schools find themselves addressing more than the educational needs of children. The curriculum within kindergarten through twelfth grade has significantly changed as a result.

When schools are unable to deal with the myriad of problems our children face, the court system now steps in to partner with the schools in a therapeutic response to the problems of families and their children. Today we have drug courts, domestic violence protection calendars, juvenile diversions, mandatory coping with divorce classes, and other programs to deal with the breakdown of families that go well beyond the detached fact-finder and reactive neutral decision maker.

The System we envisioned assumes that our justice system would embrace both the older fact-finding mission as well as the newer therapeutic mission of the courts. In addition, we added a new mission— to allow people to come to their own resolution where possible by providing as complete and understandable a system as possible for defining and exercising legal options.

2. *The Changing Role of the Legal System*

The current and coming generations of information technology enable our System to collect and distribute high quality information. Participants need to define and resolve their differences by themselves. Through technology, the System empowers and enables participants to make well-informed and deliberate decisions. The increased quality and quantity of information available to participants enhances their decisions and thus enables both a greater quality and equality of justice. The System is expected to move the participants through the process quickly, but without haste, hastening the transition in people's lives from the uncertainty their legal issue creates to the certainty that a resolution is possible and that its outline is clear.

In summary, the System is different is a number of critical ways:

a. *Self-Adjusting Interface System*

The System's interfaces are self-adjusting. This concept means that the System does not necessarily accept the participant's self-definition of his or her role, capacities, and needs, but also measures the way the participant is interacting with the System and adjusts accordingly. This concept makes it possible for the System to be much more "appropriate" for each participant.

b. *Multiple Personality System*

To further enhance the effectiveness and performance of the System, a multiple personality system was developed. This concept means that the System actually performs a variety of tasks while playing a variety of roles. The System is a neutral information provider. When appropriate it becomes a supportive and zealous advocate during the imposed resolution phase. It may also be a neutral predictor and mediator. Finally, it is a neutral decision maker or adjudicator.

c. *Flexible Dynamic Monitoring of Progress*

As individuals utilize the System, it constantly monitors the way participants are moving toward resolution. Depending upon the exercise of their options, it changes the way it treats the participants. It also monitors the speed at which the case is moving through the System. If the problem is not being resolved expeditiously, the System will become more aggressive. After the participants reach impasse, the System will

then move out of stasis and, if necessary, impose a resolution in a timely manner. The System's decision to determine that impasse has been reached will be, in part, statistically driven. The algorithm will not only include the absence of current movement but whether there is a longer-term pattern of interaction and movement. Flexible dynamic monitoring of progress will result in many cases reaching points of appropriate intervention or resolution more quickly.

Such an algorithm-driven system creates a risk of injustice to participants if the individual is forced to particular behavior based upon prior behavior of others or the lack of behavior by the opposing participant. Declaring impasse cannot only be tech driven. Again, human judgment must enter into the decision to declare impasse.

d. Ongoing Analysis of Patterns and Outcomes To Facilitate Resolution

We envisioned a System that automatically performs an ongoing analysis of patterns and outcomes in all cases. This concept is expected to facilitate resolution by optimizing the types of options presented to the participants along with the statistically generated probable outcomes associated with each option. In other words, ongoing data from each interaction feeds into a database that is then used by the System not just to observe and predict outcomes of various options, but to review and modify the options suggested by the System.

The nature of the System according to this concept is purely statistical. The opportunity for improved outcomes as a result of the ongoing analysis of patterns is real. However, human creativity must still be permitted to avoid outcomes, which may not be optimal for the participants.

B. Dangers of the Process and Insights

In Thomas More's *Utopia* there are no lawyers because the laws are simple enough for the common person to understand and apply. Our System follows a similar route. It attempts to create an interface to the legal system that any citizen can understand and use. On the other hand, we do not believe that any interface can replace the position of people in the System.

To ensure equality of access to the System, persons are necessary to provide adequate notice. Intermediaries are essential to assist individuals in accessing the System. Mediators must exercise discretion and

creativity in guiding participants to a resolution of their problem. Adjudicators must exercise discretion to determine what decisions may be resolved electronically, through automation, and which decisions will necessarily involve an adversarial hearing. Advocates are necessary to assist individuals using the System. Finally, the participants themselves must play a role in the interpretation of the information and options the System provides.

In short, technology can be a tool that not only makes the System function more efficiently, but also enhances the value of outcomes and, in turn, people's lives. However technology will not replace people in the System.

Some of the risks we identified as inherent in our System were:

Funding. The cost of funding such a system must be resolved. Is it a vision that is simply too expensive? Is it too complex?

Participants may not understand their options. What if participants are paralyzed by the number and complexity of options that the System offers? What if, instead of seeing the System as empowering, they see it as an encumbrance because it requires them to do too much of their own learning and analysis? We assume that in the worst case, someone can seek the assistance of a legal professional and take on no more of the burden of understanding than they do today. Still, today it is assumed that people will need legal professionals and they can be found at a low cost. If the System allows persons with enough motivation to find their own way to the resolution of an issue, will low or no cost legal aid disappear?

The right interface. We presume that participants will willingly use a system that has interfaces that meet the needs of all. However, a significant amount of public education and marketing will still be necessary to build trust in those who should be accessing the System. Is it possible and economically feasible to build such a universal interface?

Role confusion. There is the risk that participants will not understand the different roles that the System takes on (advocate, neutral information provider, and so on). Regardless of the way the System presents itself, they may see it as monolithic and "not on their side." In addition, the roles themselves will not be clearly defined initially or may blur over time in a participant's mind.

Trust. Building public trust and confidence in the System will be especially difficult considering the concentration of power in the System. Information is power and having almost all information creates almost absolute power. Coupled with the fact that the System will have the power to impose resolutions as well as enforce compliance, will participants be discouraged from using the System? The amount of personal and financial information the System maintains could compromise public trust. Those who use the System will have fears of invasion of privacy and identity theft.

Intermediaries. The quality of individuals who serve as intermediaries between the System and participants can affect the use and adherence of the System. The behavior and training of these individuals will have to be monitored to prevent incompetence or abuse of power.

Breakdowns. Despite the System's power, it also has characteristics of vulnerability. If power to the System shuts down, the System shuts down. Terrorists and hackers will be constant dangers to the operation of the System. Flaws and bugs in the software of the System can also cause problems. The System must also have the capability of allowing participants to correct the information it contains in a fair and efficient manner. The use of technology in our idealized System can provide efficiencies and increase the quality of decision-making by its users. However, safeguards must be built into the System to avoid abuse.

Automation. Our System depends on the existence of advanced algorithms for continually getting better at option generation and presentation. It depends as well on algorithms for pattern matching in a database of past issues. These algorithms do not now exist. Are they possible? Can they be created in a robust enough way to be the basis of an entire legal system?

Profiling. People who do not believe that they really match the pattern the System says they do may characterize pattern matching technology as "profiling." Does pattern matching infringe on individuals' right to be treated as individuals, rather than as demographic stereotypes? Is the accumulation of information into databases inherently unfair because it results in the transfer of information from the many to the few?

Convergence or self-fulfilling prophecies? Our System attempts to pull participants toward resolution by carefully presenting options, feedback, and scenario-building tools. Will the use of this sort of technology, which provides participants information about probable outcomes based upon their possible choices, lead to self-fulfilling prophecies?

VII. CONCLUSION

To cast the widest conceptual net, our committee intentionally began this study with a small set of goals and no constraints on the technology or processes that might be needed to reach those goals. Our intent was not to design a replacement legal system for the United States, but rather to explore what fair and equal justice might actually mean if all available and imaginable technology were put into practice.

As a result described above, the System we envisioned has many practical problems. An Access to Justice Technology Bill of Rights that takes into account these concerns is but a first step towards creating an ideal civil justice system accessible to all.

We believe that our culture's newfound ability to envision and then build massive information systems is a model for our justice community. If justice is served by open and equal access to the facts and opinions surrounding a legal issue, then an information perspective can help. If such an information system can allow people to solve the majority of their own legal issues and require adjudications in only a small number of cases, then there is hope that when adjudication is needed, it can be given the time and energy it deserves.

The design of this "ideal" system has demonstrated both the potential benefits and dangers of technology. It is the task of all to optimize the potential benefits and minimize the risks. The Access to Justice Technology Bill of Rights can be a crucial tool in doing so.