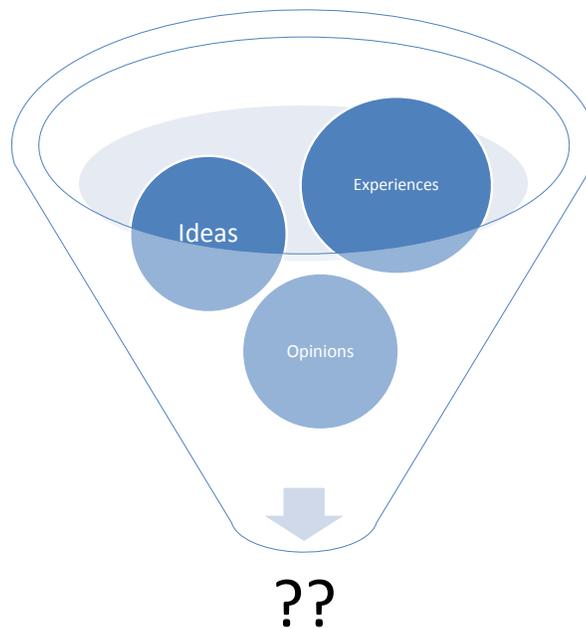


# Collaborative Deliberation through Interactive Visualization

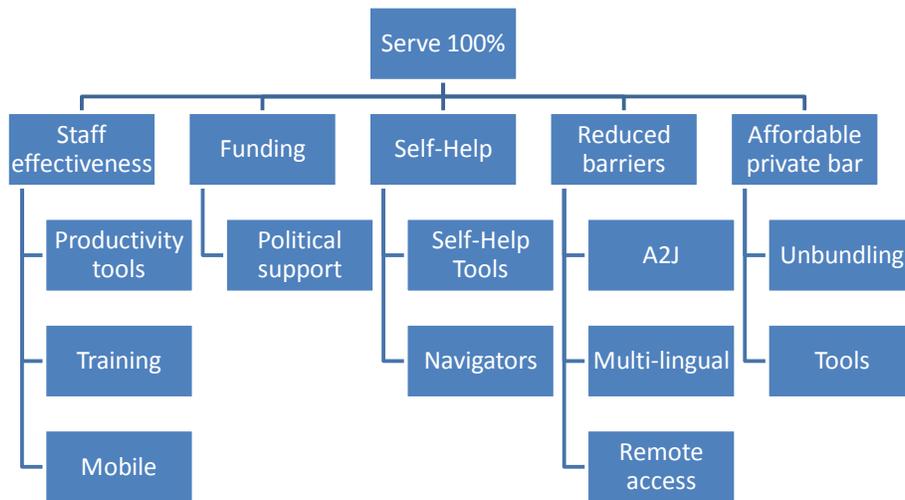
## A Choiceboxing Case Study

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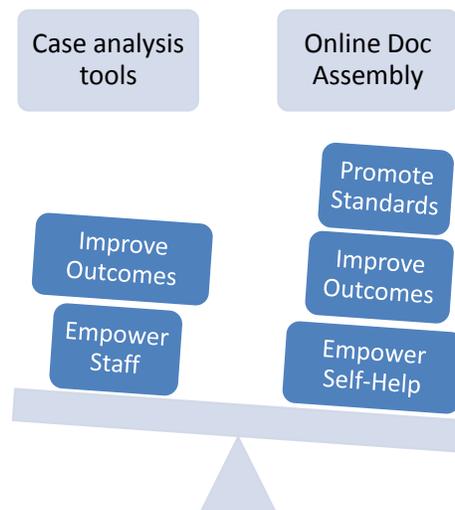
In mid 2012 and early 2013 the United States federal Legal Services Corporation convened a pair of ‘summits’ to gather input on the ‘Use of Technology to Enhance Access to Justice.’ The first session – attended by lawyers and managers from legal aid programs, judges, law professors, technology developers and suppliers, librarians, and others – identified over fifty different activities that could support this goal. The big questions remained: Which should be pursued with our limited resources? How could we funnel the participants’ deep experience, ideas, and opinions into an organized set of prioritized recommendations?



The basic conceptual framework adopted was one in which a top-level goal (providing meaningful legal assistance to 100% of those who are unable to afford it on the private market) is understood as being served by a number of secondary goals, or ‘objectives,’ such as improving program staff effectiveness, which in turn can be advanced by various kinds of activities, such as self-help tools. A natural instinct is to envision those goals and activities in a hierarchy like the following:



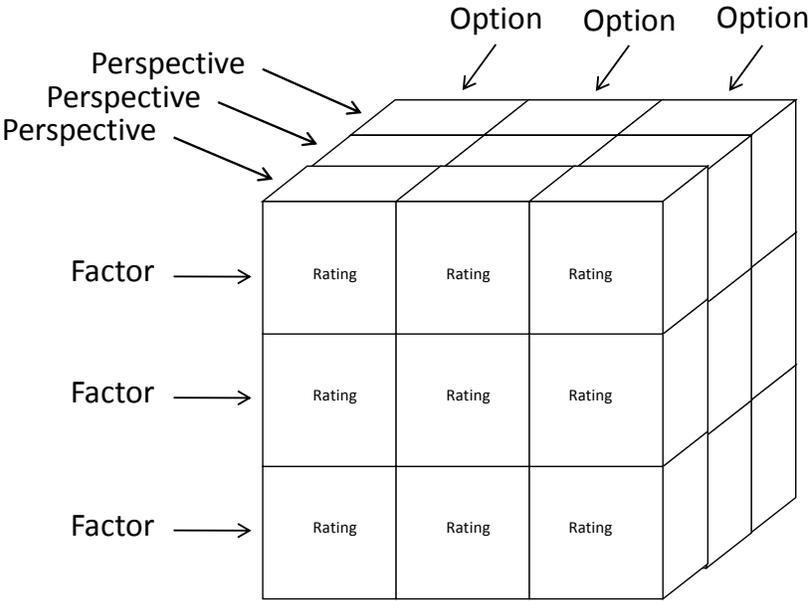
Of course, one soon realizes that a given activity may help advance more than one objective, and that the degree of advancement will vary for any activity/objective pair. For example, both online document assembly and case analysis tools might help improve outcomes, and empower self-helpers or staff advocates. But perhaps the effect of document assembly in promoting standards is enough to ‘tip the balance’ in its favor as a higher priority activity.



You could imagine doing this kind of exercise for each possible pair of candidate activities. But the number of such pairs is quite large, each of which could involve the comparative balancing of dozens of considerations.

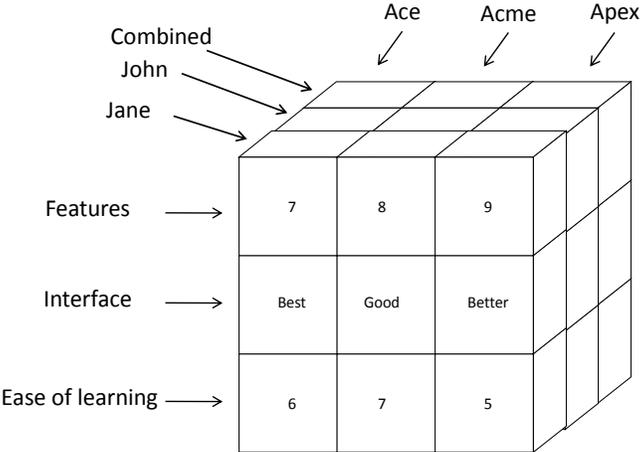
Organizers of the summits decided to employ a 'choiceboxing' process to structure the group deliberation process. Choiceboxing involves mapping one or more options, one or more factors, and one or more perspectives to the axes of a three-dimensional box. By convention, options are positioned left to right, factors top to bottom, and perspectives front to back. There is a column for each option, a row for each factor, and a layer for each perspective. Each cell at the intersection of such a column, row, and layer represents the characterization of some option in terms of some factor according to some perspective.

### A choicebox

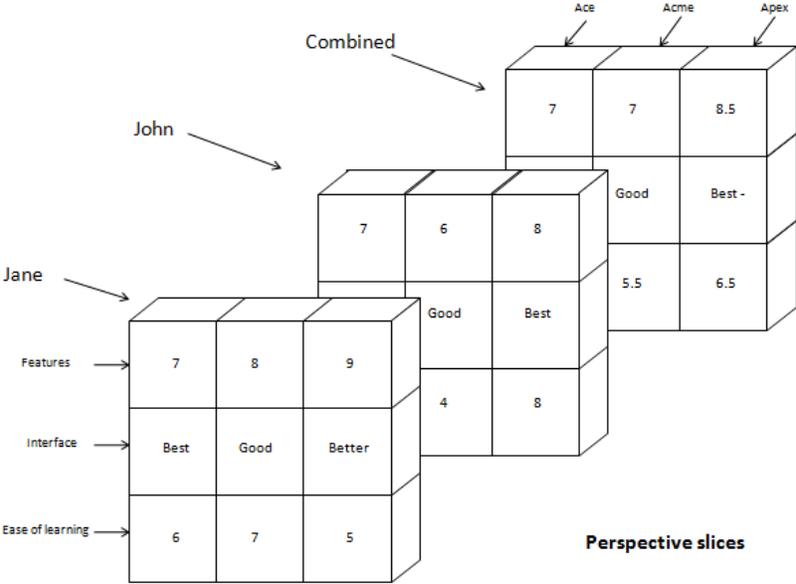


For example, imagine that Jane and John are partners in a law firm that is deciding which case management system to buy. They've narrowed it down to three products: Ace, Acme, and Apex. After lots of discussion, the choice seems to hinge on three factors: completeness of features, quality of interface, and ease of learning. The following figure depicts how this matrix of options, factors, and perspectives might be represented in a choicebox. We're seeing Jane's perspective up front. The factors are matters of opinion, so her ratings and those of John may well differ.

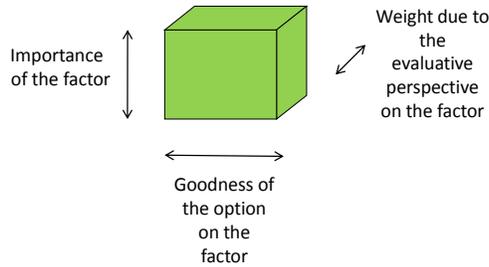
# Choosing a case management system



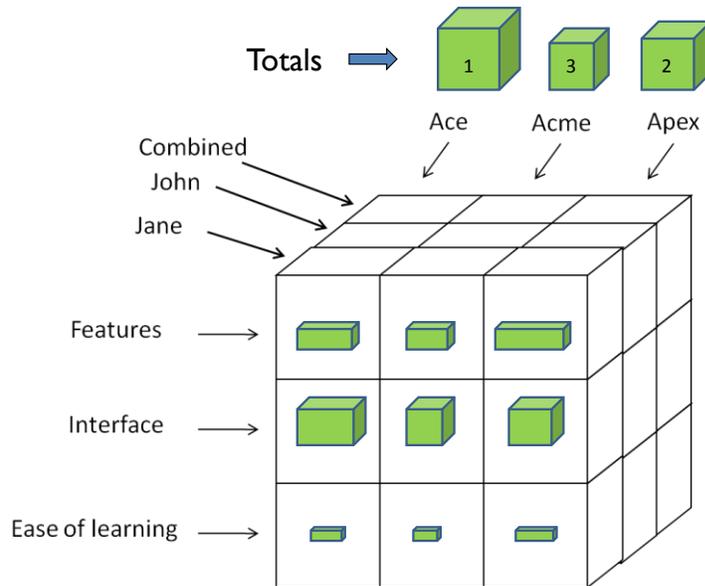
The next figure makes the separate perspective layers clearer. Now we can see some of John’s different ratings, as well as average ratings on the combined layer.



Taking this a couple of steps further, one can express each assessment of each option from each perspective in a separate block of 'goodness' like this:

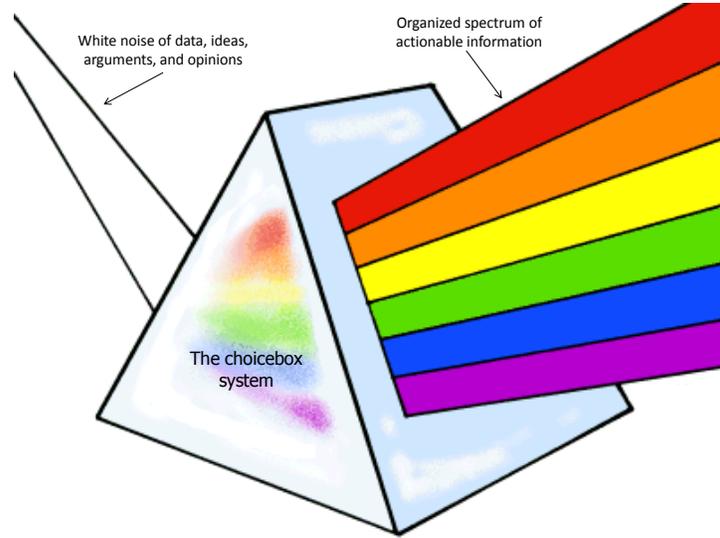


And then one can position such blocks within the overall framework of a choicebox, with associated totals, as follows. Note that the each person can set different relative heights for the rows.

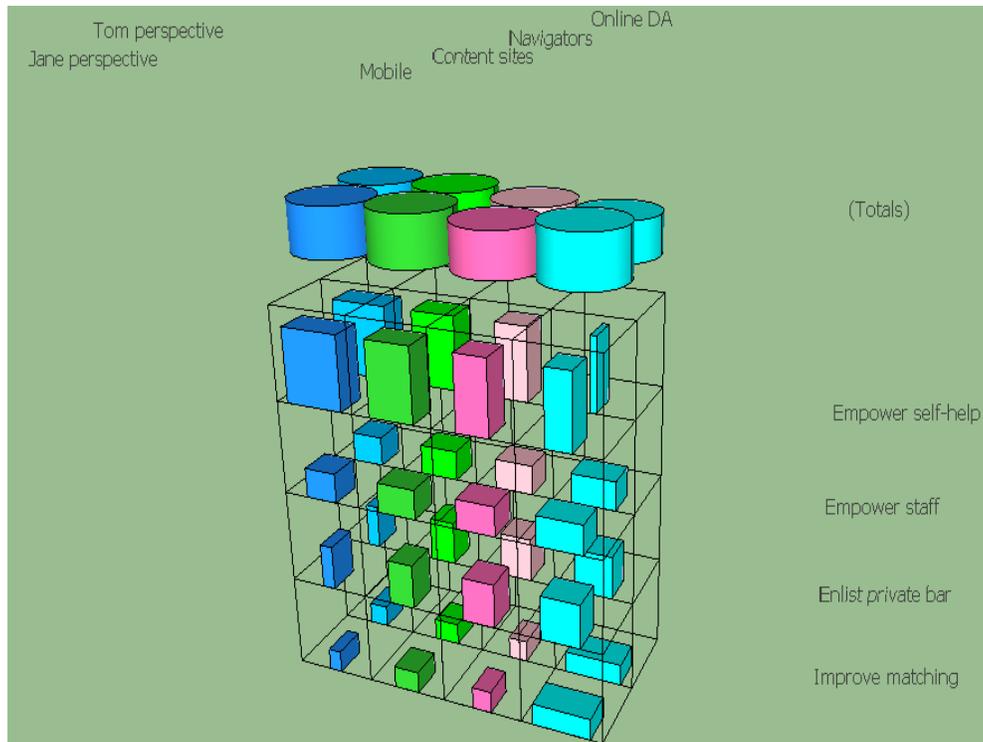


You can imagine the total boxes at top as having been formed by melting down, combining, and reshaping the 'ingots of goodness' in the columns beneath them.

The general aspiration of choiceboxing proponents is to equip decision makers with tools that enable them to refine the white noise of data, ideas, arguments, and opinions at play in a choice into an organized framework of actionable information.



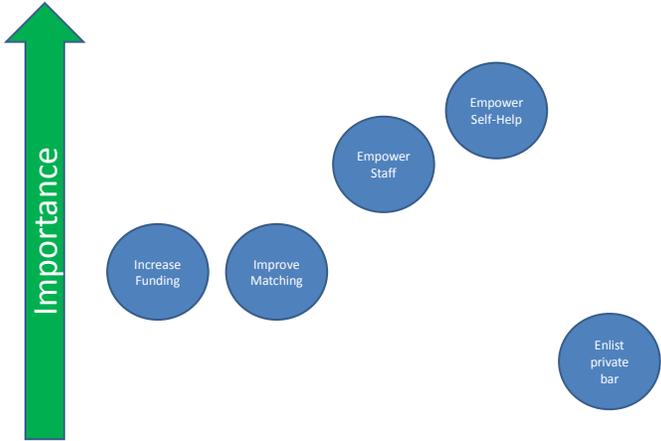
Applied to the legal services technology context, a choicebox with four candidate activities, four objectives, and two perspectives might look like this:



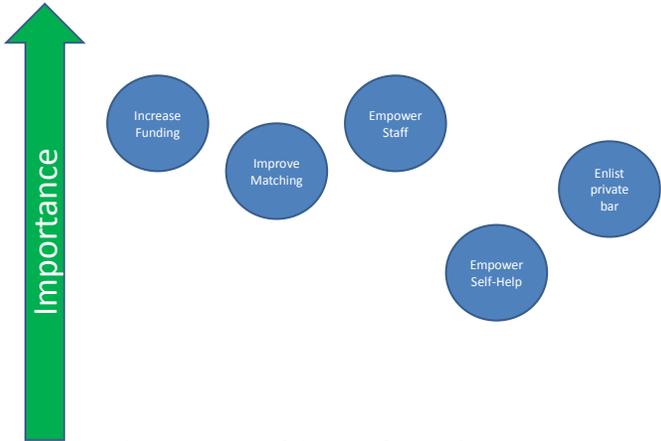
In the LSC summit process it became clear that opinions were needed on two different topics:

- the relative *importance* of *objectives* (from each participant’s perspective)
- the relative *efficacy* of *activities* (in advancing each objective, from each perspective)

In the two examples below the relative importance of a group of objectives is expressed by their vertical position in a visual depiction. People will naturally position them differently, as Jane and Tom do here.

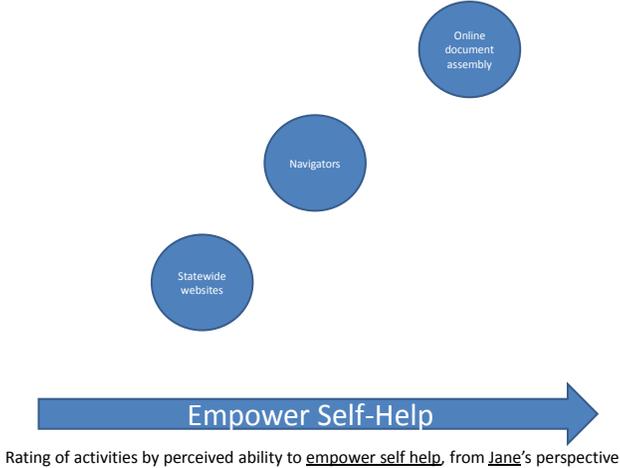


Relative importance of objectives, from Jane's perspective



Relative importance of objectives, from Tom's perspective

Similarly, the relative efficacy of activities to advance a given objective might be expressed by horizontal positions in a visual depiction. People will naturally position them differently as well, as in these examples of three activities assessed against a particular objective.



The first summit was summarized in a textual report, part of which is shown here:

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**Summit Mission, Vision, and Objectives and Technology Activity Options**

**Mission**

Explore the potential of technology to move the United States toward providing some form of effective assistance to 100% of persons otherwise unable to afford an attorney for dealing with essential civil legal needs

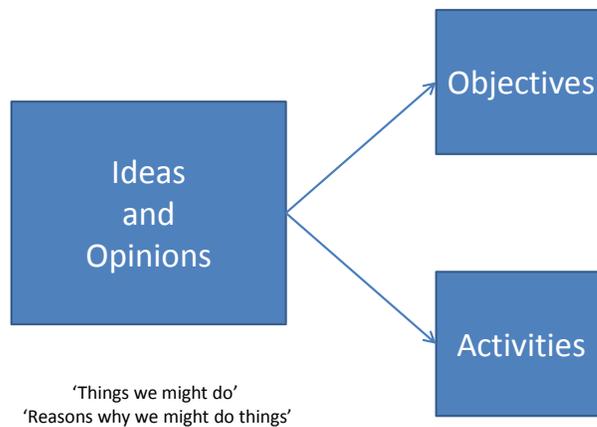
**Vision**

From a national perspective, state studies have found the legal services community has sufficient resources to serve less than 20% of the civil legal problems experienced by the poor. The result is that 80% of these needs go unmet or must be resolved using self-help. Over the last decade, legal services entities and courts have invested significant resources in developing services designed to improve the outcomes for persons who represent themselves. Those efforts have been effective but not sufficient to overcome the barriers faced by persons without legal training in attempting to use the legal process to enforce their legal rights and interests. The continuing gap between the need for legal assistance and the availability of legal services is unacceptable. Therefore, despite the shrinking resources available to the civil legal services community, the Summit recommends that the legal services community commit itself to use technology to move towards providing 100% of poor persons with an essential civil legal need with some form of effective service.

**Objectives**

The first session of the Summit identified seven objectives for the use of technology to achieve this vision:

Preparing for a choiceboxing exercise required us to decompose this fabric of text into discrete objectives and activities.



For each objective and each activity, we came up with a short name and a descriptive summary.

**Objectives** (sub-goals)  
 (Criteria on which to assess candidate activities)  
 (not in any intentional order)

Short name	Description
1. Improve outcomes	Increase likelihood of attaining just results for all litigants Increase the likelihood that SRLs will obtain court decisions reflecting the facts and law applicable to their cases rather than their inability to function within the legal system
2. Improve recipient experience	Reduce personal time and expense required Increase satisfaction with the process
3. Increase the impact of individual cases	
4. Enhance provider effectiveness	
5. Expand private bar role	
6. Empower self-help	

Technology Activities	
Short name	Description
1. Better triage	Provide providers with tools to assist in matching people with the least resource-intensive service that will have a substantial probability of meeting their needs
2. Outcome data	Link triage tools to aggregated case outcome data provided by legal services and court case management applications so that they can employ artificial intelligence self-learning capabilities to refine their case assignment algorithms
3. Optimal task allocation	Analyze and redesign service delivery processes so that the attorneys, the most highly trained and paid of the staff, do those tasks for which they uniquely qualified and delegate the rest, thus "practicing at the top of their licenses" Assign legal work to the person or team with the greatest skill rather than to the person physically closest to the client Have litigants perform all tasks that are within their capacity and comprehension
4. Clients enlistment	Employ tools by which clients enter the information needed for determining their eligibility for services, for assembling and entering information needed for the completion of legal documents, and otherwise participate actively in the process of resolving their legal matters
5. Expert systems and checklists	Develop expertise in expert systems Employ expert systems and automated checklists to assist in analyzing fact patterns and identifying the most appropriate and effective legal remedies or strategies Develop predictive models and decision support technologies for use by providers, clients, and self helpers

Two lists resulted, one with two dozen objectives and one with over fifty activities. These were felt to be too numerous for productive deliberation, so an initial 'culling' phase was adopted, in which each participant was asked to select his or her top ten items from each list. A simple drag-and-drop interface was provided for them to do so. (One for objectives; one for activities.)

## Phase 1



### 2013 Technology Summit Group Prioritization Exercise

[\(click here for more information\)](#)

Objectives	Activities
Please choose up to ten objectives that you regard as most important in advancing 100% access by dragging them to the column on the right. Click on the "+" for additional information about an objective.	
<p><b>Possible Objectives</b></p> <ul style="list-style-type: none"> <li>Expand the use of volunteers +</li> <li>Enhance provider effectiveness +</li> <li>Improve outcomes +</li> <li>Empower self-help +</li> <li>Improve recipient experience +</li> <li>Build resources and capacity +</li> <li>Increase the impact of individual cases +</li> <li>Expand private bar role +</li> </ul>	<p><b>My Top Ten</b></p> <div style="background-color: #90EE90; width: 100px; height: 20px; margin-top: 10px;"></div>

**2013 Technology Summit Group Prioritization Exercise**

[\(click here for more information\)](#)

Objectives	Activities
Please choose up to ten activities that you regard as most impactful in advancing 100% access by dragging them to the column on the right. Click on the "+" for additional information about an activity.	
<b>Possible Activities</b>	<b>My Top Ten</b>
<ul style="list-style-type: none"> <li style="border: 1px solid #ccc; padding: 2px; margin-bottom: 2px;">Outcome data +</li> <li style="border: 1px solid #ccc; padding: 2px; margin-bottom: 2px;">Optimal task allocation +</li> <li style="border: 1px solid #ccc; padding: 2px; margin-bottom: 2px;">Better triage +</li> <li style="border: 1px solid #ccc; padding: 2px; margin-bottom: 2px;">Clients enlistment +</li> <li style="border: 1px solid #ccc; padding: 2px; margin-bottom: 2px;">Expert systems and checklists +</li> <li style="border: 1px solid #ccc; padding: 2px; margin-bottom: 2px;">Remote service +</li> <li style="border: 1px solid #ccc; padding: 2px; margin-bottom: 2px;">Litigation technology +</li> <li style="border: 1px solid #ccc; padding: 2px; margin-bottom: 2px;">Mobile +</li> </ul>	<div style="background-color: #70AD47; width: 100px; height: 20px; margin: 0 auto;"></div>

Once thirty people had expressed their views this way, we were able to compile overall rankings based on the number of times each item occurred in a top-ten set. This yielded a result like the following. (Note: the screenshots here are not necessarily from the final state of the system.) Eleven objectives and ten activities were selected for inclusion in the second phase of the process.

**Rankings for Objectives (top eleven highlighted because of three way tie for ninth place)**

- "Improve outcomes" has 24 occurrences
- "Empower self-help" has 24 occurrences
- "Reduce barriers" has 22 occurrences
- "Stimulate innovation" has 22 occurrences
- "Enhance provider effectiveness" has 22 occurrences
- "Measure effectiveness" has 19 occurrences
- "Improve recipient experience" has 17 occurrences
- "Support provider collaboration" has 15 occurrences
- "Affordability" has 14 occurrences
- "Build resources and capacity" has 14 occurrences
- "Catalyze transformations" has 14 occurrences

(Input from 30 people)

**Rankings for Activities (top ten highlighted)**

- "Better triage" has 18 occurrences
- "Expert systems and checklists" has 17 occurrences
- "Remote service" has 17 occurrences
- "Document assembly for self helpers" has 15 occurrences
- "Mobile" has 15 occurrences
- "Navigator" has 14 occurrences
- "Client portal vault" has 13 occurrences
- "Optimal task allocation" has 11 occurrences
- "Unbundled services" has 10 occurrences
- "National legal access portal" has 10 occurrences

The full choiceboxing experience occurred in phase 2. Here participants expressed views on the relative importance of the objectives in focus by dragging sliders into horizontal position.

## Phase 2

### Rank objectives

Indicate the relative importance of the objectives below in advancing the overall goal of 100% access by positioning the boxes next to them. Drag boxes to the left to indicate less importance, and to the right to indicate more importance

Build resources and capacity	<input type="range"/>
Catalyze transformations	<input type="range"/>
Empower self-help	<input type="range"/>
Enhance provider effectiveness	<input type="range"/>
Be affordable	<input type="range"/>
Improve outcomes	<input type="range"/>
Improve recipient experience	<input type="range"/>
Measure effectiveness	<input type="range"/>
Reduce barriers	<input type="range"/>
Stimulate innovation	<input type="range"/>
Support provider collaboration	<input type="range"/>

Importance →

They also assessed each activity against each such objective in terms of efficacy, again by dragging and dropping.

### Score this activity on objectives

**Activity: Expert systems and checklists**

Develop expertise in expert systems. Employ expert systems and automated checklists to assist in analyzing fact patterns and identifying the most appropriate and effective legal remedies or strategies. Develop predictive models and decision support technologies for use by providers, clients, and self helpers.

For each of the below objectives, position the box next to it to indicate the degree to which it is likely to be advanced by the above activity. Leave the box alone if you would expect no impact; drag it to the far right to indicate the most impact

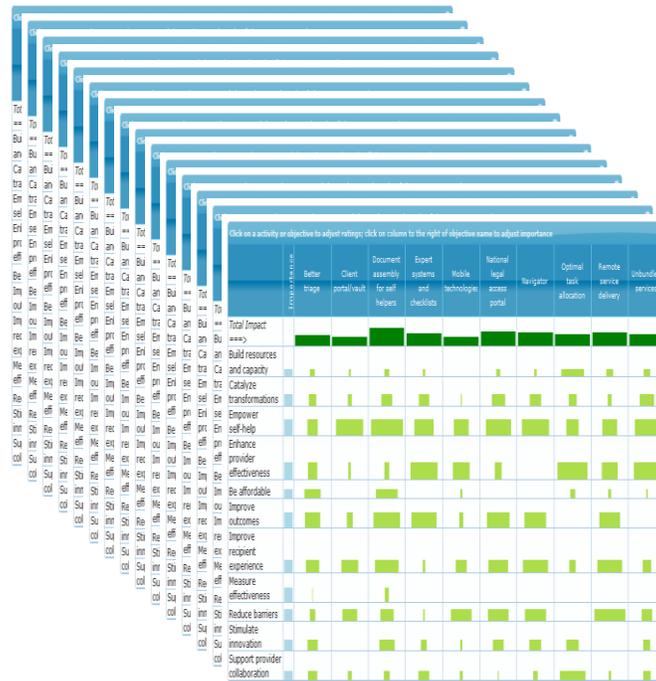
Build resources and capacity	<input type="range"/>
Catalyze transformations	<input type="range"/>
Empower self-help	<input type="range"/>
Enhance provider effectiveness	<input type="range"/>
Be affordable	<input type="range"/>
Improve outcomes	<input type="range"/>
Improve recipient experience	<input type="range"/>
Measure effectiveness	<input type="range"/>
Reduce barriers	<input type="range"/>
Stimulate innovation	<input type="range"/>
Support provider collaboration	<input type="range"/>

Effectiveness in advancing objective →



(This is a two-dimensional analog of the three-dimensional value blocks discussed above. You can think of the areas of light green in each column as having been combined to produce the dark green blocks at top, which were then scaled down to avoid taking up too much room on the screen.)

One can envision the collection of responses across participants as a stack of such summaries:



Total rankings of objectives were computed by summing the values given each one by each participant (with slider positions having been converted to a 0 to 10 scale.)

Options		Factors	Options by User	Factors by User
Rank	Factor	Weight		
1	"Empower self-help"	243.9		
2	"Reduce barriers"	235.9		
3	"Improve outcomes"	234.6		
4	"Improve recipient experience"	234.6		
5	"Stimulate innovation"	223.7		
6	"Enhance provider effectiveness"	222.1		
7	"Build resources and capacity"	221.3		
8	"Be affordable"	217.1		
9	"Measure effectiveness"	216.3		
10	"Support provider collaboration"	187.8		
11	"Catalyze transformations"	184.8		

(Total of weights from 32 people)

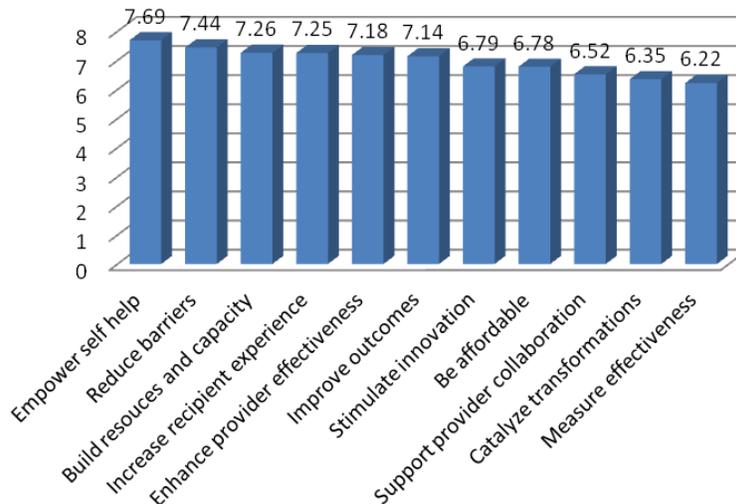
Total weighted scores for options were calculated similarly. The highest theoretical score that an activity could achieve would have been 1100 (a score of 10 of 10 on each objective, with each objective rated the maximum value of 10). The actual scores produced by the process ranged from an average of 311 to an average of 403. There were 32 participants in phase 2. The scores below are summed across participants.

Options			Factors	Options by User	Factors by User
Rank	Option	Score			
1	"Document assembly for self helpers"	12855.56			
2	"Better triage"	12762.69			
3	"Mobile technologies"	12106.78			
4	"Expert systems and checklists"	11924.87			
5	"Remote service delivery"	11600.21			
6	"Unbundled services"	11290.24			
7	"Navigator"	11258.98			
8	"Client portal/vault"	10613.56			
9	"National legal access portal"	10242.11			
10	"Optimal task allocation"	10238.45			

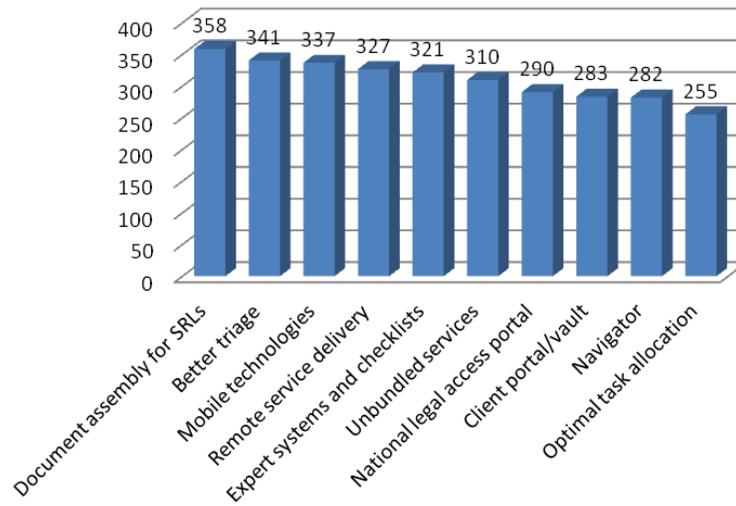
(Total of weighted scores from 32 people)

Expressed more graphically, the average rating of objectives and activities can be shown as follows.

### Average Ratings for Objectives



## Average Ratings for Activities



The above results formed the basis for deliberations at the second summit, which focused on implementation (*how* rather than *what*.) The organizers decided to adopt the top five objectives and the top five activities identified through the choiceboxing process as the focus for the summit. The results had sufficient credibility to serve that purpose. Other ideas were not discarded, but incorporated as part of implementation strategies.

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To conclude,

- A diverse group of people with strong opinions pondered a complex set of possible activities and objectives, and settled on meaningful priorities through an open and participatory process.
- The process tapped collective intelligence and stimulated mindfulness about tradeoffs.
- It was regarded as a fair and efficient way to make tough decisions about the relative merits of many competing ideas.
- Participants seem to have found the choiceboxing system intuitive and the results satisfying.