

TIG FINAL EVALUATION REPORT

Grantee name: Community Legal Aid
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I. Project Goals and Objectives

Project Goal: Community Legal Aid (CLA) sought to enhance the accessibility and efficiency of its intake system by creating a mobile, technology-friendly on-line application in both English and Spanish that is integrated with its case management system (hereafter, “On-line Application Module”).

- **Project Objective 1:**
Create a guided interview using A2J Author that will allow applicants to more readily determine if they are eligible for legal assistance at CLA.
- **Project Objective 2:**
Deploy the latest version of A2J Author which has mobile technology enhancements so that applicants can more easily apply for legal services through their smart phones.
- **Project Objective 3:**
Integrate the data collected by the A2J on-line application module with CLA’s case management system so that eligible applicants can get their applications opened quickly and more efficiently.
- **Project Objective 4:**
Duplicate the on-line application module in Spanish so that Spanish speakers with limited English proficiency can more readily determine if they are eligible for legal assistance at CLA and get their cases opened quickly and more efficiently.

There were no significant changes in the goals or objectives during the course of the project.

All project goals and objectives were accomplished.

II. Evaluation Data and Methodologies

The evaluation data and methodologies used to determine whether this project achieved its goals and objectives track those that were set out in the Evaluation Plan and include the following:

- Description and posting of A2J On-Line Application Module link on program website in both English and Spanish
- Description of test protocols, test results and notable changes implemented based on test of the English and Spanish A2J interviews
- Data on number of on-line applicants who had a case opened in the case management system (hereafter, ProLaw).
- User data regarding usefulness and usability of the system.
- Data on the number of users accessing the A2J On-Line Application Module through a mobile device
- List and description of functionalities and technical components of A2J mobile technology enhancements
- Integration map for data collected by A2J with corresponding fields in case management system
- Description of test protocols, test results and notable changes implemented based on test results of the integration component
- Number of on-line applications accepted by program that successfully integrated with case management system
- List and description of technical components of A2J on-line application module – CMS data integration system
- List and description of capacities and functionalities of A2J on-line application module – CMS data integration system.

III. Summary of Major Accomplishments, Recommendations and Future Steps

Summary of Major Accomplishments

- On July 29, 2017, CLA began accepting e-applications using an A2J Author guided interview. On January 25, 2018, CLA began offering a Spanish language version of the same e-application. Through April 1, 2018, CLA has received 1545 e-applications completed through the A2J interview.
- By replacing our web-form application with an A2J e-application, many applicants have been able to learn immediately if they can and should be applying for help with CLA. A comparative study of e-applications opened by CLA in its case management system showed that we went from a 35% acceptance rate when we were letting applicants apply through a web form to a 53% acceptance rate using the A2J guided interview.
- Our A2J e-application is letting applicants more easily apply for help with a mobile device. A2J analytics obtained since February 12, 2018 show that approximately 40% of all applicants are applying through a smartphone or other mobile device.¹
- Integration of data collected by the A2J interview with our case management system, Pro Law, began on January 28, 2018 and through April 19, 2018 has enabled 269 applications to be entered into ProLaw without the need for support staff to manually enter this data.

¹ Select screen shots of the mobile version of our e-application appear at the end of the report

Summary of Major Recommendations

These recommendations are based on the lessons learned set forth in Part VI of this report.

- Think about the trade-off between being a beta tester for software on a project and the time saved ultimately by the project successfully completed.
- Get application integration working fully before sending your interview script for translation.
- Determine at the outset the technology that is needed to insure data is held securely and server is safe.
- Be clear about whether your case management system offers an API for integration of data. Insist on speaking with the programmer who will actually be doing the work rather than a middle person.

Future Steps

These are the future steps that CLA will be taking after this TIG has been completed.

- As CALI continues to upgrade and improve A2J Authoring software, CLA will need to decide how to keep A2J software up to date on CLA's web server.
- CLA is exploring the costs and benefits of having the A2J e-application translated into additional languages.
- In the weeks following the launch of the Heroku platform that receives the submitted e-applications, we became aware of a handful e-applications that failed to submit to the intake display (i.e., the Heroku in-box where intake staff retrieve the submissions). We had knowledge of this because our developers got an email alerting them each time there was a failed submission. We know that these applications failed to make it into the intake display because one or more required answer values were not completed. However, our A2J interview was programmed so that an applicant could not get to the submit screen until all required questions have been answered. It has been over a month since we were last notified of a failed submission but we are continuing to work CALI to try to understand how applicants were able to submit incomplete applications.
- Enhance the Ruby on Rails app so that intake workers can choose to send automatic emailed templated replies to applicants directly from the app rather than needing to open Outlook to correspond with applicants.

IV. In-Depth Analysis of Accomplishments

A. Developing the A2J Interview

A primary objective of this TIG was to create an on-line application that would help applicants more readily determine if they are eligible for legal assistance at CLA. Prior to the

start of this TIG, CLA had an existing on-line application. It was a web-form built in Drupal. However, because it was a web-form, it allowed applicants from anywhere in the world and with any type of legal problem to submit an e-application for assistance. Although our website explained the geographical limitations on our service and types of legal problems we handle, many users ignore these instructions. Consequently, intake staff was spending considerable time reviewing and rejecting these inappropriate applicants. A review of the number of e-applications submitted in the six months prior to launch of the new e-application revealed that we were rejecting approximately 65% of all e-applications. Our objective was to replace this e-form with an e-application that could screen out applicants who should not be applying for legal assistance with CLA and, in as many cases as possible, direct them to resources more appropriate to their needs.

We chose to use A2J Author as the software for a new e-application because of its ability to guide a user through an interview and, more critically, stop an applicant from advancing if they did not meet certain threshold eligibility criteria. It should be noted that we only programmed the interview to screen out applicants who did not fall within our service area or have a legal problem that fell within our priorities. Even though we ask applicants about household income and assets, we felt that this was an area susceptible to mistake and didn't want to have a computer decide this area of eligibility. Instead our intake workers review and verify applicants' answers regarding financial resources. Moreover, because we have Title III funding and other grants that don't have financial guidelines, we thought it would be too complex to have all of these permutations for financial eligibility built into the interview.

We also included in our interview a question asking applicants to declare if they are a citizen, a legal permanent resident or "some other" immigration status. However, we did not program this question to screen out applicants even though immigration status is an eligibility issue. If the applicant states they are "something other", it serves as a prompt for an intake worker to inquire on a call back as to the nature of their immigration status.

For those applicants who are screened out because of location or legal problem, we tell them, "If you think we made a mistake in rejecting you, you can call and have your situation reviewed again by re-applying over the telephone." CLA has designated phone intake hours every day of the week. We understand that some applicants who live outside our service area may have a legal problem that is occurring in our service area (e.g., they are the defendant in a divorce that was filed in our service area). In some of these situations, CLA may be the appropriate provider of legal assistance. To insure that we don't lose these possible applicants, we added a Learn More that explains if you live outside our service area with a legal problem arising in our service area, you will need to apply by telephone.

In all cases where an applicant is rejected by the interview, we provide them with links to on-line legal service program locators (for those rejected because they live outside our service area) or to the Massachusetts Legal Resource Finder (www.masslrf.org) or our state legal information website (www.masslegalhelp.org) (for those rejected because they are seeking help with a legal problem outside our priorities).

Another feature of our A2J e-application is that we allow someone other than the applicant to indicate that they are submitting the e-application on behalf of the applicant. This was an important aspect to this project because we have a number of community agencies that we partner with on grants and wanted a way for them to make referrals through our on-line application. To do this, we needed to develop a separate path for people filling out the application on behalf of someone else. This alternate scenario requires us to use text variables in A2J author that reflect the variations in pronouns and verb forms. As those familiar with A2J Author know, the ability to program questions using first or third person is one of the advantages of this software.

Another objective of this TIG was that our new e-application would allow applicants to apply more easily from smart phones or other mobile devices. When we submitted this TIG application, we understood that CALI was on the verge of launching A2J Author 5 which was to be the first version of this software with mobile technology enhancements. However when we were ready to start developing the interview in A2J Author in 2016, CALI was still testing the software. So our A2J developer began the interview we had scripted in the beta version of A2J Author 5. When CALI did formally launch its new version with mobile enhancements (released as A2J Author 6) in spring 2017, it was still in beta, despite CALI suggesting it was ready for production. We are not implying that CALI was being deceptive in any way. They were just not as far along as they thought they were. Until developers began using the software in real world environment CALI was not fully aware of the many issues that continued to face their product. The challenges posed by being among the first programs to use A2J Author 6 are discussed as well under Part V.

After the first iteration of the interview was programed, the project team spent considerable time testing the interview for any logic flaws, broken links, spelling and punctuation typos, and overall usability. Numerous corrections and revisions to the A2J interview were made as result of this testing. Overall it took just about a year to complete the A2J programing and related testing before we felt ready to publically launch our new A2J e-application. We went live with an English version of our new A2J e-application on July 29, 2017. The latest version of the interview can be accessed here, www.communitylegal.org/apply-online.

As of April 1, 2018, 1545 e-applications have been submitted using the A2J e-application. Approximately 820 of these e-applications were then opened (or accepted) by CLA into its case management rate, an acceptance rate of 53%. This is an improvement over the acceptance rate when we let applicants apply through an e-form where the acceptance rate was only 35%.

We also know that approximately 41% of applicants are applying through a smartphone or other mobile device. We also know that the average time to complete the e-application is 11 ½ minutes.

A2J Author analytics report: 02/12/18²-04/02/18

² The first version of A2J Author with analytics became available on February 12, 2018. The numbers provided in this report were generated by CALI at CLA's request.

Interview	Runs	Pop-ups clicked	Learn Mores clicked
Online intake (English)	516	99	64
Online intake (Spanish)	31		
General information			
Devices used	Desktop	318	
	Smartphones	198	
	Tablet	22	
	Phablet	8	
	Unknown	1	
Average time per run	11 mins 31 sec		
Bounce rate (hit 1st page and left)	8%		
Returning users	96		
Average time per run for returning users	12 min 16 sec		

B. Integration with Case Management System

Another major objective of this TIG was the integration of the data collected by the A2J interview with our case management system. Our case management system is ProLaw. Through this TIG, we were going to be one of the first users of A2J Author to attempt to integrate its collected data with ProLaw. We had initially scoped out the feasibility of this integration with technicians at ProLaw during the preparation of our TIG application and were assured it was possible. We budgeted for this programming cost based on the hours ProLaw estimated would be involved on their end.

Work on this component of the project did not start in earnest until we were getting close to publically launching the A2J e-application. We wanted to make sure our A2J interview was fully tested and developed before starting work with integration. This also meant that the integration component was not in place when we launched the new A2J e-application on July 29, 2017. Until we were able to complete the integration development, we continued to use the system we had in place for the web-form e-applications which involved routing the e-applications as an email to a designated Outlook e-mailbox. These emails contained all of the answers collected by the A2J interview in an easy to read report created by our A2J programmer. It also meant that our intake staff would continue to have to input accepted applications into the CMS manually.

Work on this integration component ended up presenting a number of challenges to this project. When we reconnected with the ProLaw technicians to begin work on the integration we were told – for the first time – that ProLaw did not offer an API. We spent many weeks being passed around Pro Law technicians trying to figure out how we could build the “bridge” needed

to carry the data from A2J to ProLaw. Eventually we landed with a ProLaw programmer who told us he could custom build an API for us. Needless to say, this delayed getting started on the integration phase of this project. There were additional challenges that needed to be overcome once we got past the problem of the API and these are saved for discussion in Parts V and VI of this report.

In terms of an analysis of how we achieved integration, the next key step in this project was to provide ProLaw with a map correlating the answers collected by the A2J interview with fields in ProLaw. Our map key along with a list of the functionalities of the integration protocols is provided in an appendix to this report.

Another key stage in this development was that we needed a secure location for the A2J data to be stored and from which the custom built ProLaw API could “hit” the data. Because of security and access issues involving CLA’s server, we decided to have the data collected by the A2J interview routed to Ruby on Rails app hosted on the Heroku cloud platform. CLA intake workers would then log into the secure Heroku site to retrieve the e-applications. From within Heroku, the intake workers can view all of the answers submitted in an easy to read custom report. When a review of the application is completed, including a conflict check (still done manually in the CMS), the worker accepts the application for submission into ProLaw by clicking a submit button located on the report. In addition to creating the new ‘case’ within ProLaw with applicable data fields filled in, a copy of the entire e-application (as it appears in Heroku) is copied into a note field in the new ProLaw case.

As intake workers are processing these applications, they can assign four different statuses to an application.

Pending. This is the status assigned to all applications when they first come into Heroku.

Under Review. Status the intake worker can put on an application that is undergoing a conflict check or is being reviewed for some other reason

Submitted. Status that gets assigned when the application is accepted into the CMS

Rejected. Status that gets assigned to applications that are not accepted by the CLA and, thus, not submitted into the CMS

All applications are stored in a secure archive on a Heroku server. An archive is a helpful feature because sometimes we have reason to retrieve an e-application. An applicant could complain they never heard from us after submitting an e-application. Maybe it was rejected and the applicant did not receive our reject communication (where the applicant has supplied an email this reject is sent by email; otherwise a letter is mailed). So having an archive allows us to look and see if we ever got it. We also can retrieve rejected applications and submit them into the data base if something later changes concerning their eligibility.

During the development phase, we set-up demo sites within Heroku and ProLaw to test the functionality of the integration process. After working out many bugs in the systems, on January

27, 2018 we moved from a test environment to importing actual e-applications into the live ProLaw data base.

Through April 19, 2019, we have successfully submitted 269 applications from the Heroku site into ProLaw.

C. Duplicating the A2J e-application in Spanish

As stated above, we went live with an English version of our A2J e-application on July 29, 2017. Once we felt confident that the English version of the A2J e-application was indeed working properly, we sent a copy of the interview script (now modified somewhat from its first incarnation) for translation into Spanish. This was in September 2017. We encountered one major challenge in this aspect of the project. The translator advised that offering an option for a third person to apply on behalf of someone else would be very complicated and add substantial cost to this aspect of the project. We ended up revising the way in which a third person would apply for someone else by dispensing with the ability to modify pronouns and verb forms to reflect the fact that another person is applying on behalf of someone else. Instead, through a Learn More, we inform the person completing the interview that they should answer the questions as if they are the applicant. Sounds obvious, but this is a departure from how a third person applying in English would read a question or other content. We also rationalized this departure from the English version on the belief that it was not likely that a third person helping someone else apply would be doing so in Spanish.

Before going live with the Spanish version, CLA support staff who are fluent in Spanish tested the interview in a development site. We received no feedback concerning any of the logic or flow of the interview. Feedback mostly involved spelling mistakes and suggestions for better ways to phrase questions in Spanish. We went live with a Spanish version of our A2J e-application on January 25, 2018. You can access the latest version of this e-application here, <http://communitylegal.org/es/aplique-en-linea>

From February 12, 2018³ through June 12, 2018, 45 applications have been submitted using the Spanish option.

D. Survey

In order to evaluate the usefulness and usability of our e-application we added a short feedback survey at the end of the A2J interview. In order to insure we got applicants to give us feedback, we structured the submission process to make it **look** as if applicants need to complete a survey in order to submit their application; that is, when an applicant clicks submit in the A2J interview they go to the survey on the CLA website, from the survey page they can get to the final confirmation page that tells them they have successfully completed an application and will hear from CLA within 3 business days. The survey questions are not mandatory, but we believe this sequence has allowed us to get a very high survey completion rate. Unfortunately, we did not think to add the survey questions into the e-application until March 11, 2018 well after we launched in July 2017.

³ See footnote 2 regarding the availability of A2J Authoranalytics.

Both English and Spanish speaking applicants experience the same submission process. Spanish speaking applicants go to the Spanish translation of the survey and a Spanish confirmation page on CLA's website.

Here is a screen shot of the survey.

Feedback

Let us know what you think

Did you try to apply by phone before you applied online?

- ☒ Yes
- ☐ No

How easy was it to apply online?

- ☐ Easy
- ☐ Hard
- ☐ No opinion

Why did you decide to apply online?

- ☐ Convenience
- ☐ Phone wait was too long
- ☐ I do not have a phone I can use
- ☐ I could not get through on the phone
- ☐ I cannot leave a message on the phone
- ☐ I wanted to apply outside of working hours.
- ☐ Other

Other reason

How long did it take you to complete the application?

- ☐ 5 minutes or less
- ☐ 5-10 minutes
- ☐ 15-20 minutes
- ☐ 20-30 minutes
- ☐ Longer

How long? (If more than 30 minutes)

Would you recommend applying online to a friend or family member?

Yes I would

Yes, I would because...

No I would not

No, I would not because...

Don't know

I do not know because...

Other recommendation

Other ...

Done

From March 11, 2018 and through April 20, 2018, we received feedback from 239 applicants, and here is what they told us:

Did you try to apply by phone before you applied online:

Yes	69
No	170

How easy was it to apply online?

Easy	224
Hard	3
No Opinion	12

Why did you decide to apply online?

Convenience	154
Phone wait was too long	19
I do not have a phone I can use	1
I could not get through on the phone	13
I cannot leave a message on the phone	3
I wanted to apply outside of working hours	13
Other (includes applicants who left this question unanswered)	36

How long did it take you to complete the application?

5 minutes or less	61
5-10 minutes	113
15-20 minutes	48
20-30 minutes	5

Longer	2
Not Answered	10

Would you recommend applying online to a friend or family member?

This question was answered by only 145 applicants. The vast majority who did answer, said “yes” and stated “convenience” or “simplicity” or similar explanations as the reason why. The few who said “no” or “don’t know” stated the following as among the reasons:

“Not sure. Depends on whether I get a lawyer”

“I messed up on entering my income”

“I would prefer to speak to someone directly”

V. Factors affecting project accomplishments, and

VI. Strategies to address major challenges

- A2J Author 6 still in beta during the development of our interview

As mentioned in Part III, one of the major factors affecting the accomplishment of this project was that A2J Author 6 was delayed in its launch and didn’t get out of beta until the end of November 2017. When our A2J Author developer began developing the interview, she encountered dozens of bugs in the software. Initially she came up with workarounds for these bugs, but when CALI fixed a bug, the workaround sometimes “broke” the interview requiring a further fix on our end. Issues that our A2J developer encountered in version 6 included the following:

- ✓ Logic in the beginning of a question did not work if user navigates the interview using the progress bar instead of using logic to move between questions.
- ✓ Logic before the first question in the interview did not work at all.
- ✓ The way dates are created and calculated, caused a good deal of confusion and they acted differently as the software evolved.
- ✓ Null values for variables or what happens when a variable is not answered – the way the software treated the values of unanswered variables changed pretty frequently. This behavior is critical for unanswered questions and has a big impact on the logic of the interview. Much of the logic tests for answers that are unanswered and then determines the path. This aspect of A2J Author does not yet seem to be entirely pinned down or decided. CALI just added a null value to T/F variables on the third week of April 2018.
- ✓ A2J Author 4 has logic that allows steps/signposts in the interview to change according to the value of certain variables. For example, the step or signpost along the way can reflect the legal problem the applicant says they have. This feature was not working when we began developing our e-application. After CALI completed the feature and our developer took advantage of it, A2J Author 6 duplicated all 200+ questions in the interview. Fortunately, CALI programmers helped us fix this by going into our interview and manually deleting each of the duplicate questions.

Our strategy for resolving these programming challenges involved close communication with CALI A2J Author staff. It also helped that our programmer was on the beta testing team and had an established close relationship with CALI. All the above issues were eventually overcome.

- Case Management System did not have an existing API

It was not until well into this TIG that we discovered that ProLaw does not have an existing API even though prior to applying we had been assured that integration of XML data into ProLaw was possible. As mentioned in Part III, ProLaw ended up building a custom API for this project. At the start of the project we knew we needed a programmer to figure out how to display the data collected in the answer xml file that A2J Author produces as the output at the end of a successful interview. This additional programmer produced an app for CLA intake workers to manipulate this data so that it could be imported into ProLaw, saved for review, rejected, and ultimately archived. The same programmer also figured out how to securely transmit data from CLA's Linux webserver to CLA's Windows server that hosts ProLaw. We had not planned on needing a programmer at ProLaw to create an API that would accept the JSON data the app we created produced. So in the end we needed to hire two programmers who each had to create an API. These unanticipated steps added additional time and costs to the project.

- Incomplete applications submitting to Heroku

As stated under future steps, for several weeks after the Heroku platform went live, our developer was getting email alerts about failed submissions to the Heroku intake display (i.e., the Heroku in-box where CLA intake workers retrieve applications). We know that these applications failed to make it into the intake display because one or more required answer values were not completed. In designing the A2J interview, we made certain questions mandatory. Before an applicant can get to submit, there is a review done by the program checking for missing required answers. If there are missing answers, the applicant is forced to go back and complete any required answers. The failed submissions all lacked one or more of these answers. Somehow a few applicants were able to submit incomplete applications but in doing so it was rejected by Heroku because it detected that a required field was missing. It has been over a month since we were notified of a "failed submission." One explanation may be that this was a cache issue. Nevertheless, we are still working with CALI and our programmers to understand why these applications were able to get submitted. With regard to the failed submissions, the email notifications contained all of the answers that were collected and we were able to manually process each of these applications notwithstanding the missing information.

VII. Major lessons and recommendations

- *Think about the trade-off between being a beta tester for software on a project and time saved ultimately by project successfully completed.*

In fact, it took our developer probably much longer than it should have because of the bugs with A2J. If she were not part of the legal aid community and willing to donate hundreds of hours of her time, we would not have been able to afford to complete the project.

- *Get integration working fully before sending your interview script for translation*

When we wrote the milestone timeline for this TIG we thought we would be developing the English and Spanish interviews somewhat simultaneously. In fact, once we had the English version working to our satisfaction, we sent a copy of it to be translated into Spanish. While the interview was being translated, we were also working with the ProLaw consultant creating the custom API. At the same time, we were writing (and revising) the data migration key and building the Heroku platform. After the API was built, we discovered that we needed to add a number of variables whose values would be parseable by the Ruby on Rails app into JSON for import into ProLaw. We had not put these additional variables in the version we had sent to be translated. As we saw this happening, we learned that waiting until the integration component is fully functional before finalizing the Spanish e-application is a much more efficient use of resources. This is the reason why the launch dates for both of these components of the project were only three days apart.

- *Determine at the outset the technology that is needed to insure data is held securely and the server is safe.*

A2J Author stand-alone package is not designed to provide an easy way for interviews to be uploaded securely. When the page for uploading interviews is available to a developer, it is also available to the public and therefore open to malicious uploads. CommunityLegalAid.org also did not have an SSL certificate, so we also had to get one and force all browsers to use https so that applicants could complete the interview securely.

- *Be clear about whether your case management system offers an API for integration of data. And insist on speaking with the programmer who will actually be doing the work rather than a middle person.*

The one lesson that stands out among all lessons learned in this project is be precise with the case management consultants regarding the technical components and functionalities involved in a project of this type. Even though we had been assured that external data integration was feasible (in fact, we were told it had been done by other clients of ProLaw) we did not inquire as to how this had been accomplished. Luckily we found an in-house ProLaw programmer who was able to custom build a secured API that allows CLA intake workers to submit the data directly to the ProLaw database via the Heroku app.

CLA's A2J Mobile E-Application

Select Screen Shots



CLA Online Intake
2018-03-02c

1: Can CLA Help?

undefinedundefined?

First: (Required)

Middle:

Last: (Required)

Suffix:

Maiden

Next



CLA Online Intake
2018-03-02c

2: Legal Problem

Please pick the topic for G's legal problem. You can only select one. If G has more than one legal problem, you will have to submit another application for that problem.

- ☐ Bankruptcy
- ☐ Education
- ☐ Employment
- ☐ Family
- ☐ Government Benefits
- ☐ Health Benefits
- ☐ Housing
- ☐ Immigration
- ☐ G has a different legal problem, show me more.

Next



CLA Online Intake
2018-03-02c

3: About You

Now I need to ask about G's [household](#).

How many people including G are:

60 or over (Required)

18 to 59 (Required)

Under 18 (Required)

[Who do I count as a member of my household?](#)

Next