

MEMORANDUM

To: Interested Parties

Re: CCCApply and OpenCCC Issues and Opportunities

Ari Bader-Natal, Chief Technology Officer, Calbright College
October 2020

Introduction

We appreciate the many benefits of all colleges in the California Community Colleges being able to share a common infrastructure for the student-facing college application process. CCCApply serves as a “gateway to the California Community Colleges,” and its existence eliminates the need for each college or district to independently procure and customize (or build and maintain) its own application system, and its annual improvements benefit colleges system-wide. Given that application questions are largely determined by shared external requirements – residency determination, Chancellor’s Office MIS reporting, state law, and federal law – and that variations on these requirements are also shared across colleges (Noncredit, International, etc), this shared infrastructure approach is ideal.

But while all colleges in the system share the benefits of this common infrastructure, all colleges also share the limitations of this infrastructure. **We focus on six key issues with CCCApply and OpenCCC today that affect prospective students and the colleges that serve them:**¹

¹ This list of issues and recommendations is not intended to be comprehensive, but rather to address a few key areas of opportunity based on our experiences at Calbright this past year with OpenCCC, the Administrator tool, the Report Center, and the CCCApply Noncredit Application. We do not currently use any other version of the application, MyPath, or Project Glue, so these are not addressed here.

1. **OpenCCC remains a barrier to entry for CCCApply.**

2. Colleges do not have the data needed to support their applicants.
3. CCCApply and OpenCCC do not look or feel like the college's website.
4. Instructions and question wording leave applicants concerned and confused.
5. Dealing with fraudulent applications is time- and resource-intensive for colleges.
6. Colleges and researchers do not have access to aggregate gateway data.

Together, these issues result in an application process that loses too many prospective students along the way. Furthermore, Calbright analysis finds two groups that may be disproportionately impacted:²

² Throughout this memo, passages reporting on Calbright data analysis are highlighted in blue.

older students (age 25+) and Black or African American students.³

³ Given that so many prospective students drop out of the application process prior to responding to the application screens that collect demographic information, equity-oriented questions around the application process cannot be answered definitively. In absence of this, we identified a way to collect demographic information for a subset of Calbright applicants who otherwise would have dropped off prior to submitting an application. We share an analysis based on this data in the discussion of [Issue #2](#).

For each issue that we identify, we offer concrete recommendations featuring changes to the current CCCApply and OpenCCC technologies that we believe address the core problem:

1. *In order to eliminate drop-off due to the OpenCCC account creation process*, we recommend introducing "Social Login" options to CCCApply to allow applicants to log into CCCApply quickly without an OpenCCC account. The OpenCCC account can then be created later by relocating any required questions into CCCApply and then, when they are answered, leveraging an OpenCCC Account Creation API to issue a new account and associate it with the application. [View full recommendation.](#)
2. *In order to provide colleges with the data they need to support their applicants*, we recommend dedicating the first page of CCCApply to collecting critical contact information, then immediately processing this initial information using a variation of the current Rules and Messages functionality in CCCApply Administrator. [View full recommendation.](#)
3. *In order to make the application look and feel consistent with the college website*, we recommend introducing a "Branding" tab in CCCApply Administrator from which a college can customize the user experience for their applicants. From this tab, colleges can (a.) specify a custom domain for their application, (b.) set a header logo, and (c.) introduce styling, header/footer content, and script-based functionality by customizing HTML blocks rendered at the top and bottom of every page in the college's application. [View full recommendation.](#)
4. *In order to minimize applicant confusion from question and instruction wording*, we recommend positioning visibly-prominent help icons next to confusing text that reveal clarifying explanations, examples, and/or common questions in the page sidebar. [View full recommendation.](#)

5. *In order to reduce the resources that colleges devote to fraudulent applications*, we recommend: (a.) updating the fraud scoring functionality more frequently, (b.) incorporating additional data quality checks on fields like email, phone, and address, (c.) scoring fraud immediately upon submission, and (d.) offering a Spam Status API to lookup the fraud score for an application and to send back a confirmed fraud category. [View full recommendation.](#)
6. *In order to provide colleges and researchers with access to gateway data*, we recommend (a.) setting a schedule for publishing a set of summary statistics and reports that characterize applicant behavior in the OpenCCC and CCCApply systems, (b.) defining a process by which other data requests related to this shared gateway can be submitted and reviewed, and (c.) updating the version of the business intelligence tool powering the Report Center in a timely manner when the vendor releases updates. [View full recommendation.](#)

We believe these recommendations will result in (a.) a more streamlined, cohesive experience for incoming students system-wide, and (b.) an enhanced ability for colleges to remotely support all of their prospective students more equitably through the entire application process.

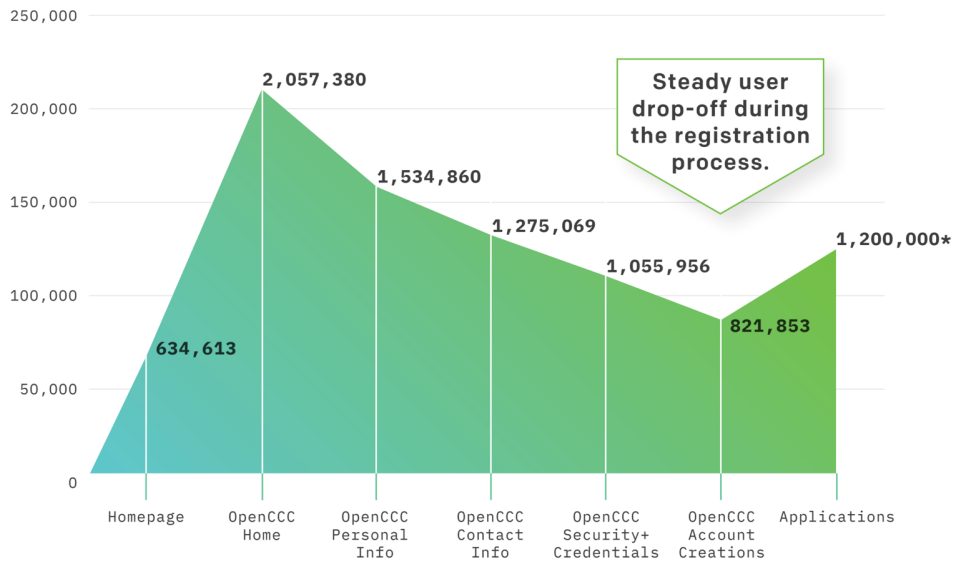
Issue 1: OpenCCC remains a barrier to entry for CCCApply.

The OpenCCC account is designed to grant students access to system services, but the process of creating this account unfortunately acts as a significant barrier to this access. In 2017, over 60% of prospective students who start the OpenCCC flow drop out before completing an account, meaning that they cannot begin a CCCApply application.⁴

⁴ The [Student Journey to Success Project report](#), cites Google Analytics data for the OpenCCC website (California visitors in 2017) that indicates that over 60% of users who began the process on the homepage ended up dropping out before successfully creating an account. As this account is required to access CCCApply, these visitors could not begin their application.

DROP-OFF IN REGISTRATIONS

Online application user flow (California users only)



Source: Google Analytics, Date Range: 01.01.2017-12.31.2017

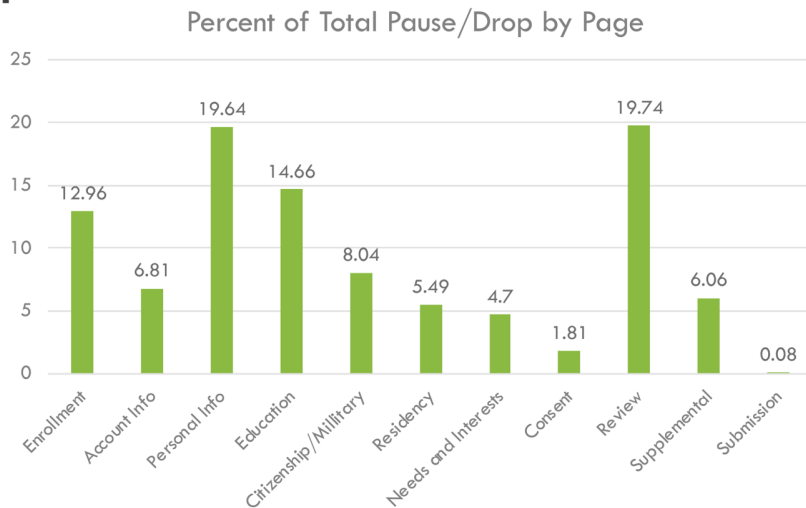
* Each registered applicant may apply or re-apply to multiple California community colleges, resulting in higher application figures.

To highlight the importance of OpenCCC issues, we note that data collected for the 2018 Student Journey to Success Project indicates that *more prospective students drop off while completing OpenCCC (60%) than while completing CCCApply (19%).*⁵

⁵ Among students who reached the start of CCCApply, only 19% dropped out before submitting the application, according to the report's [CCCApply Problem Diagnosis deck](#) (p.21).

MULTIPLE APPLICATION STEPS = MANY OPPORTUNITIES FOR DROP-OFF

- 81.47% of applications have no indicator for Last Page, meaning that they are finished all the way through.
- For the remaining 19% the distribution is as follows



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A number of issues may factor into this: the text and visual guidance through the first few screens of OpenCCC can be confusing, the screens require a surprising amount of personal

information, and the entire process takes a significant amount of time to complete.

Recommendation

The OpenCCC account-creation process is a prerequisite to begin an application in CCCApply because the OpenCCC account is the only supported login mechanism for the CCCApply system. *We recommend adding in a set of “social login” options that visitors can use to quickly get started in CCCApply.* ⁶*When users sign in using one of these fast options, a screen of*

⁶ See https://en.wikipedia.org/wiki/Social_login

questions can be added to CCCApply that collects data required to issue an OpenCCC account and CCCID, and the account creation can be accomplished via an OpenCCC API call. ⁷The end result

⁷ The OpenCCC account can be created programmatically (i.e. by CCCApply calling an OpenCCC API) without the student needing to navigate the dedicated OpenCCC web application experience.

would be identical to what it is now – an OpenCCC account with all the necessary data fields filled – but without the hassle and confusion of navigating two separate websites.

If, on the other hand, the OpenCCC account must remain the only login option for CCCApply, we would recommend reducing the number of questions required to initially issue an account, and shift the remaining questions into CCCApply, where they can be used to update the OpenCCC account via API calls.

Issue 2: Colleges do not have the data needed to support their applicants.

Colleges today cannot easily assist prospective students in navigating the application process – either while they are applying or after they abandon the OpenCCC/CCCApply process – because colleges are missing the necessary data. *Despite the fact that a prospective student is applying to a specific college, the college does not currently receive contact information for the applicant until after the student has completed both the OpenCCC account creation process and the CCCApply application.*

We are happy to hear that after several years of discussion and planning, ⁸ colleges will soon

⁸ [2016 New Change Requests : 2016-30: Colleges Want Access to In-Progress Applications](#)

have access to “In-Progress” application data. We believe that this is a great step forward in providing colleges with information to assist their applicants. We are concerned that this is

not a complete picture of prospective students who have abandoned the process, as it only includes applicants who successfully completed the OpenCCC account creation process and make it through the first screen of CCCApply. Historic OpenCCC website analytics suggest that over 60% of prospective students drop out during the account-creation process prior to beginning their application in CCCApply.⁹ *This suggests that only 40% of the prospective*

⁹ The Student Journey to Success Project cites Google Analytics data for the OpenCCC website (California visitors in 2017) that indicates that over 60% of users who began the process on the homepage ended up dropping out before successfully creating an account. As this account is required to access CCCApply, these visitors could not begin their application.

students who start the process will be counted in the new "In-Progress" applicant dataset. We want to know about everyone who comes in the door, however, not only the subset that makes it through OpenCCC and into CCCApply.

We have worked around this issue at Calbright by asking each prospective student to provide us with their contact information before we direct them to the OpenCCC/CCCApply systems to start the application process.¹⁰ Since the confirmation page on our pre-application form is

¹⁰ This includes name, email address, phone number (with approval for texting), and program of interest.

the only place from which we redirect prospective students to our application on OpenCCC/CCCApply, we collect a comprehensive timestamped record of every prospective student who begins the application process at Calbright.¹¹ Based on this data, if we do not

¹¹ This pre-application data also allows us to accurately measure the percentage of prospective Calbright applicants who make it through all of OpenCCC and CCCApply. Over the past three months, even with multiple forms of reactive and proactive assistance, only 38% of prospective Calbright students who we redirected to the OpenCCC application process subsequently completed their CCCApply application.

receive a completed application from this email address or phone number within a few days, we send follow-up email and text messages. This outreach has allowed us to effectively re-engage prospective students who had previously abandoned their application prior to completion. At Calbright, 15% of the completed applications that we have received to date have come from applicants who only completed their application after clicking through the link in one of these follow-up messages.¹²

¹² Of all non-spam applications received by Calbright in the past year, 85% were completed in one sitting and 15% were completed in a subsequent sitting (returned to the app via a special link in a reminder email/text that included an CCCApply campaign parameter.) This percentage is likely on the low end of what other colleges might record, as we currently use the Noncredit Application exclusively, and the abandon rate for the longer applications that include all 83 residency questions are likely to be higher.

The individuals in this 15% are all prospective students who would have been "lost" to the application process had they not received and acted on this follow-up messaging from the college. While they may not be a representative sampling of the larger set of all applicants "lost" to the process, they are a group for which we have collected demographic information, and this allows us to explore important equity-oriented questions that would otherwise be

very difficult to address. Specifically: Do the applicants who were, until the college intervened, “lost” to the application process disproportionately represent any specific racial/ethnic identity groups, genders, or age groups? *We compared the proportion of individuals in each racial/ethnic/gender/age group who submitted their Calbright application on their own with those that only submitted after acting on follow-up messaging sent by the college, and we found a statistically significant difference in the proportion of Black or African American students (6.3% higher application completion among the follow-up group),¹³ and another among students in*

¹³ A 2-proportion z-test found that *Black or African American applicants* who acted on Calbright's student services follow-up communications prior to submitting an application had statistically significantly higher completed applications (23.5%) than Black or African American applicants who did not act on student services follow-up communications prior to submitting an application (17.2%), $z = 2.6, p = 0.01$.

the 25+ age group (4.2% higher application completion among the follow-up group.)¹⁴ This suggests

¹⁴ A 2-proportion z-test found that *applicants age 25+* who acted on Calbright's student services follow-up communications prior to submitting an application had statistically significantly higher completed applications (91.5%) than applicants age 25+ who did not act on student services follow-up communications prior to submitting an application (87.3%), $z = 2.0, p = 0.04$.

that prospective students in both of these groups will likely complete applications at a higher rate if colleges can directly communicate with and support them from the very beginning of the application process.

In a separate analysis, we aimed to determine what percentage of all drop-offs the new "In-Progress Application" database was effectively recording. *During a recent 30-day window, of all visitors who we directed to OpenCCC+CCCApply after providing us with contact information, 58% completed and submitted an application (note: 70% of these were spam applications.) Of the remainder (i.e. those who did not submit an application), only 17% were recorded in the new In-Progress application database. 83% were not recorded in the In-Progress application database because these applicants exited the OpenCCC or CCCApply systems before the record was created.* The In-Progress application system captures information too late in the process to provide colleges with a comprehensive list of their prospective students.

Recommendation

For any colleges that do not currently collect contact information prior to OpenCCC/CCCApply and act on it to re-engage non-submitters, the 15% statistic and the age and racial/ethnic identity differences reported above highlight a new opportunity to close equity gaps and to meaningfully increase the number of applications received.

Every college in the system should have access to this type of actionable data. To do this, *key contact information – including name, phone number, and email address – should be collected prior to the lengthy account-creation process.*¹⁵ With the OpenCCC account-creation removed as a user-

¹⁵ The form should indicate that the college will use this information to communicate with the student, so a checkbox to grant approval to send text messages would be appropriate.

Additionally, this would include the appropriate consent language around allowing the college to store and process this data.

facing step (and instead created via API from CCCApply), per Recommendation #1, *these initial questions could be displayed as the first page of the CCCApply application.*¹⁶ Ideally, this

¹⁶ A mockup of the contact information page interface is discussed in [Appendix A](#).

Welcome

Contact Information

Full Name [?](#)

Email Address [?](#)

Program of Interest [?](#)

-- Select --


Phone Number [?](#)

By providing your cell phone number you consent to receive text updates from Calbright College. Message and data rates may apply.

initial data collection step could be supplemented by additional college-specific questions. *This could be accomplished by enhancing the current "Supplemental Questions" functionality in the CCCApply Administrator tool to specify a second set of custom questions that will appear on the first page of the application.*¹⁷





¹⁷ A mockup of the Supplemental Questions page interface is discussed in [Appendix B](#).

Supplemental Questions

The Supplemental Questions page is defined using an XML file within an associated schema to enforce page rules and formatting. To export a page, click on the Download arrow icon  in the corresponding row.

Note: Based on the Active status and the Effective Date, only one page of questions will display in the CCCApply application at a time.

[Import XML](#)

Page ID	Status	Application Type	Position	Effective Date	Actions
465	Active	Noncredit	First Page	11/24/2019	 
466	Active	Noncredit	Last Page	11/24/2019	 

[Previous](#) Page of 1 [Next](#)

In order to quickly bring information about the new prospective student into the college's Constituent Relationship Management (CRM) system or support team processes, we would recommend introducing additional ways to transfer this contact information from the In-Progress data records in CCCApply. *One simple way to do this could be accomplished by enhancing the existing "Rules" functionality in the current CCCApply Administrator tool such that the college could specify that a rule should run either prior to application submission (i.e. the current behavior) or after contact information is first collected (i.e. when the In-Progress application is first created.)*¹⁸ By

¹⁸ A mockup of the Rules page interface is discussed in [Appendix C](#).

The mockup shows a page titled "Rules" with an "Add Rule" button in the top right. Below the title is a table with the following data:

Name	Trigger	Order	Status	Created	Updated	Actions
send-to-CRM	Before Create	1	Active	08/10/2020	08/10/2020	
reject-unless-noncredit	Before Submit	2	Active	01/10/2020	06/10/2020	
reject-dual-enrollments	Before Submit	3	Active	09/30/2019	06/10/2020	
reject-out-of-california	Before Submit	4	Active	09/30/2019	06/10/2020	

Below the table are navigation controls: a "Previous" button, a "Page 1 of 1" indicator, a "10 rows" dropdown menu, and a "Next" button.

doing this, the existing functionality with email rules and customizable message templates would enable colleges to send contact information for new applicants to an admin-specified email address (e.g. to be routed to a CRM), would enable colleges to easily send custom emails to new applicants (e.g. with a welcome message including link to resume application), or perhaps to catch errors earlier than submission-time.¹⁹

¹⁹ In the future, a useful complement to this Rules and Messages enhancement would be the introduction of a college-facing Application Status API. This API would allow a college to programmatically look up the status of an application by CCCID, application ID, or email address, and would return information such as Last Page Completed (with timestamp) and Last Question Answered (with timestamp.)

With the right rules in place, the college would have access to contact information for each applicant within moments of the applicant beginning the process. By collecting this information prior to the lengthy account-creation process, the 60% of applicants who historically dropped off from the OpenCCC website will be both visible and reachable.

Issue 3: CCCApply and OpenCCC do not look or feel like the college's website.

From a student-centered perspective, a prospective student is trying to apply to a specific college, but they are sent to a series of external websites that are very clearly *not that college*.

Calbright applicants are often confused by the transitions and differences between our college website, the OpenCCC website, and the CCCApply website, and we suspect that applicants at other colleges feel similarly. While our team does its best to explain and demonstrate to applicants how best to navigate around these hassles and ambiguities,²⁰ our team does not

²⁰ Calbright provides interested applicants with a [34-page slide deck](#) annotating each screen with explanations about how to complete the screen.

believe that the solution to this problem lies in improving explanations of how to navigate a disjointed user experience. Instead, we believe that the prospective student's actual experience should be better aligned with their goal of applying to a specific college.

Recommendation

While the three issues above can be addressed individually, we recommend a change that speaks to this entire set of interrelated issues. *CCCApply is currently offered as a standalone student-facing system to which each college directs potential applicants, but it should instead be offered to each college as service that can be "white-labeled" and presented as the college's own application.*²¹

²¹ With appropriate credit given to the CCC Chancellor's Office, the CCCApply Steering Committee, and the CCC Tech Center.

By this, we mean the ability to serve the application from a customer-specific URL, to define customer-specific branding and stylesheets, to send customer-originated messaging, and to insert customer-specific page content.

By customizing the URL for each college, we could reduce confusion by sending applicants to a subdomain on the college's website (e.g. [apply.calbright.org](#) rather than [openccc.net](#).) By customizing the OpenCCC and CCCApply website branding via stylesheets, applicants could see the college logo at the top of each page, and imagery, colors, and fonts that are consistent with what they saw on other parts of the college website. When students receive automated emails, they would come from a familiar name and address at the college, and their responses would be delivered to that person at the college.²² By allowing colleges to add custom HTML to the header and/or footer of each page in the application process, a college could list support phone number and email address where applicants need them most, and colleges could embed their existing set of tools, like a live chat support widget,²³ a chatbot, or perhaps web analytics tracking, in order to better understand and support students through the application process.

Thankfully, the core functionality for making much of this possible already exists in the CCCApply Administrator tool. This tool already allows for colleges to specify their own programs/majors, term structure, email and error rules, message templates, and supplemental questions. Building additional college-specific capabilities into this tool will

A mockup of the Branding page interface is discussed in [Appendix D](#).

Branding

Custom Domain
<https://apply.calbright.org> Edit

Email Sender Name
Calbright College Admissions Office

Email Sender Address
admissions@calbright.org

Email Stylesheet
<https://...>

Application Header HTML

```
<div><h2>Application to Calbright College</h2></div>

Questions? Call us toll-free at 1-833-956-0225.
```

Application Footer HTML

```
<link rel="stylesheet" media="print" href="....css">

<script
src='https://service.force.com/embeddedservice/5.0/esw.min.
js'></script>
<script>
var initESW = function(gslbBaseUrl) {
  embedded_svc.settings.displayHelpButton = true;
  embedded_svc.settings.language = "";
  embedded_svc.settings.enabledFeatures = ["LiveAgent"];
  embedded_svc.settings.entryFeature = "LiveAgent";
  ...
};
...
</script>
```

²² Note that moving communications to the college provides a simple and direct way to enable to colleges to implement the set of recommendations around “tailoring the message” detailed in the 2018 Student Journey to Success Project [Communications Toolkit](#): use the right sender, prioritize word choice, make it personal, use the right tone and voice.

²³ Calbright offers live chat support embedded on each of our websites that is handled by the same team that supports phone calls, texts, and emails from applicants. Embedding this tool in the OpenCCC and CCCApply experience for our applicants would allow us to smooth over usability problems, and help students successfully complete the application process.

allow each college to further customize visual branding, email sender information, application URL, and introduce additional functionality²⁴ that directly supports the

²⁴ Our technical recommendation would be to allow the college to specify both CSS rules and Javascript code to be rendered on each page load, perhaps in the form of an HTML block that is rendered at the top of each page and another at the bottom. This could then be used for directly

inserting information about support in the HTML and/or referencing external JS and CSS files hosted by the college directly.

Californians they serve. (A visual mockup of this can be found in [Appendix D](#).)

Similar to the current support for Supplemental Questions, Rules, and Messages, the customizations described here could be entirely opt-in, so that each college could choose if and when to start taking advantage of these new capabilities. This could significantly reduce the operational launch and support footprint, as the initial release would not require immediate action from each college prior to the production go-live. This would also allow for these features to be implemented in stages, creating an evolutionary cycle of implementation, system-wide feedback, and iteration.

Issue 4: Instructions and question wording leave applicants concerned and confused.

Given the context and the purpose, questions and instructions must be worded precisely, but this wording can be intimidating or confusing for prospective students. Applicants do not have visibility into how their responses will be used, which can lead to heightened concern.

Recommendation

The OpenCCC and CCCApply systems both have an affordance for preparing, attaching, and displaying context help: a help icon that opens up informational text in the application sidebar. The current implementation has one key usability issue that limits its usefulness: When help text is displayed, the application itself is covered and can no longer be edited. This means that an applicant cannot view help text while they are filling out the application, but rather must switch modes between completing the form and reading about how to answer a given question. *We recommend modifying this behavior so that the application remains editable when help text is displayed for a given question.* This change would allow help text to enhance the experience without interrupting it. *We would also recommend testing an enhancement in which help text is automatically displayed in the sidebar when the applicant's browser is "focused" on a question that has help text associated with it.* With this in place, as an applicant worked through the application, the relevant bits of help text would be displayed alongside each question without any proactive action required.

We have heard from our applicants that the current explanatory messages embedded in OpenCCC and CCCApply do not answer many common questions.²⁵ *We recommend that the help text be used more broadly than it is today.* Help text can be used to answer common

Enrollment Information

Term Applying For ⓘ

-- Select --

Educational Goal ⓘ

-- Select --

Intended Major or Program of Study ⓘ

-- Select --

HELP

Select the educational goal that best describes your reason for this application.

A mockup of this interface is discussed in [Appendix E](#). Currently, when help messages are displayed, the application form is covered and is not fillable. Here, the sidebar is not an overlay, so can remain open as the applicant fills works through the page. When a form element is “focused” by the mouse or keyboard, associated help text can be opened automatically, removing the need to click on each help icon to view the guidance.

²⁵ Calbright currently attempts to address this problem by providing applicants with a [downloadable PDF](#) that includes annotated screenshots of each step in the OpenCCC and CCCApply process with clear explanations, but this support is neither discoverable nor contextualized. Support would be much more effective if the explanations were positioned directly next to the location of the issue, rather than being contained in a reference document that needs to be downloaded and opened in a separate window.

questions, clarify common misconceptions, explain why a question is being asked, address concerns around the privacy of answers to sensitive questions, and generally offer more approachable explanations to questions than the applications instructions provide.

In order to identify what issues would be most helpful to address with help text, *we recommend reviewing several existing collections of questions and issues that have been collected or recommended in the past, including all frequently asked questions on the [ccchelp.info](#) helpdesk website, questions and issues highlighted in the [2016 CACCRAO memo](#), and recommended clarifications highlighted in the [2018 Journey to Student Success diagnosis document](#), annotated notes from our [2019 Application Tutorial](#), and any areas of confusion raised recently by the CCCApply subcommittees and working groups. By displaying and addressing a larger set of common application concerns and questions in context, applicants will likely find answers to more of their own questions without needing to look outside of the application.*

Issue 5: Dealing with fraudulent applications is time- and resource-intensive for colleges.

Despite the presence of a centralized system for scoring and flagging these spam applications, techniques evolve rapidly to subvert these systems. The end result is a categorization with both false positives (i.e. valid applications that are flagged as fraudulent) and false negatives (i.e. fraudulent applications that are not flagged), which creates two different sets of issues for college staff.

Fraudulent applications are often used to gain access to college resources of value, including newly-minted college email accounts that can then be misused to spam others and for illegal activity like hosting and sharing content in violation of the Digital Millennium Copyright Act. College IT and A&R departments are forced to devote time towards manually addressing these issues. Furthermore, since fraud scores are not currently calculated immediately when an application is submitted, there is a variable time delay after a college has access to a new application and before the application is fraud-scored. This means that a college cannot act on new applications in real-time with confidence, and that any proactive issuance of accounts and credentials runs a significant risk of misuse.

In recent months, we have seen a shift from actors using email addresses from easily-identifiable “disposable” email providers to using recommended email providers (e.g. Gmail, Yahoo) and even email accounts from other colleges in the California community college system. In order to respond to rapidly-changing techniques, we have introduced our own layer of fraud scoring and handling that leverages an additional set of third-party tools and APIs. Today, these include tools to validate in real-time that email addresses, mailing addresses, and phone numbers are valid and active, and that email domains, IP addresses, and IP ASNs do not match those frequently used by previously-flagged fraudulent applications. We also introduced automated processes to green-light any false-positives that are manually verified by our staff. *Ideally, this processing would not be necessary to do at the college level, as the centralized service that all colleges rely on should be updated regularly to incorporate new checks system-wide.*

Recommendation

We believe that, given the fast-paced nature of changing strategies to acquire valid college accounts, the fraud-related features of OpenCCC and CCCApply need to be revisited and updated more frequently. The strategies that were effective last month are not as effective this month. *The fraud scoring algorithm should be updated to incorporate additional data quality checks, along the lines of what we described above.*

The variable gap between the time an application is submitted until when it is scored is problematic for colleges that wish to process applications as they are submitted. Fraud scoring should be run synchronously upon application submission, so that colleges can process newly-submitted applications with confidence as soon as they are recorded.

It would be helpful if CCCApply offered a Spam Status API that supported looking up fraud scores for an application and posting back college-confirmed fraud categorizations. With the ability to send back a confirmation of whether a given application was confirmed as fraud by the college,²⁶

²⁶ This is currently done manually using the Spam page in the CCCApply Administrator website.

colleges can help improve the resilience of the centralized system's anti-fraud technologies by automatically sending back false positives and false negatives that were corrected by automated processes and services maintained by the college.

Issue 6: Colleges and researchers do not have access to aggregate gateway data.

Colleges could more effectively help identify issues and offer more informed recommendations if they had better access to aggregate data from the application process and experience. Many of the issues raised in this memo cite data that is not generally accessible to colleges. This data was available to cite only because it was shared in past years as a part of specific initiatives (e.g. the Student Journey to Success Project from the Chancellor's Office and the Foundation for CCC) or published presentation (such as CCC Tech Center presentation in response to the CACCRAO memo.) Given the wealth of data and dashboards available to colleges and researchers to explore the outcomes of college programs (e.g. LaunchBoard, DataMart, etc), it would be worth evaluating the potential value of making publicly available a set of aggregated data and reports focused on the gateway to the system.

Recommendation

A first step here would be to identify a set of aggregate data from OpenCCC and CCCApply to report out on a regular basis, rather than only in response to the specific needs from internal evaluations or external presentations. This could include data that provides visibility into usage of the application system – to help answer questions like “What percentage of applicants are visiting from mobile vs desktop devices?” and “What percentage of applicants drop off after each screen?” – and also include data that provides a more accurate picture of who is interested in entering the community college system, not just who ultimately submits an application.²⁷

²⁷ These statistics are only useful if spam can be effectively identified and removed from the dataset.

Additionally, in order to better answer system-wide equity-oriented questions about access, retention, and successful completion, releasing aggregate data from the front-end of the

process could be an ideal complement to the data being collected and shared around enrollment and completion via reporting tools like the DataMart and SSARCC.

Many useful questions cannot be addressed with a pre-selected menu of reports or datasets. *We recommend formalizing a process by which interested researchers can submit specific data requests to be reviewed, evaluated, and prioritized.* This could bridge the inevitable gap for questions that can not be addressed based on the approach above.

Finally, the data analysis tools made available to colleges should be kept up-to-date. Currently, the reporting tool provided for exploring application data, the CCCApply Report Center, is running vendor software that has not been updated in six years of annual license renewals.²⁸

²⁸ The CCC Report Center currently runs a 2014 build of the TIBCO JasperReports Server software.

Newer functionality including data visualization options, data export options, and secure data transfer options have been added to this vendor's software in subsequent years.

Summary

We believe that the opportunities identified here directly affect student enrollment at every college that relies on CCCApply and OpenCCC, and that finding effective solutions will be of value across the system. While the issues themselves will sound familiar to recent applicants and are well-known by the colleges, we believe that the aforementioned set of technical recommendations approach these issues in a new way. Our intent is to focus on solutions that could be incorporated into the current CCCApply software infrastructure (rather than necessitating a clean slate), but without knowledge of the internals of the current system, we cannot say whether this is the case or not.

As a new adopter of the CCCApply system, we have benefited from past years of work resulting in the abbreviated Noncredit Application in 2019 and the redesign of the end-to-end user experience for mobile devices in 2020.²⁹ We hope that our recommendations can help

²⁹ *Since opening our doors last year, 69% of all web traffic to our pre-application form comes from mobile devices.* Improvements to the mobile application experience will be increasingly important as this trend continues.

kick off a new wave of high-impact improvements to the shared gateway to our colleges. A more customizable college-focused design combined with security and user experience improvements to the California Community Colleges application process will ultimately help our system support more Californians now and in the future.

Acknowledgements

Several of the issues highlighted in this memo were first collected and reported by Calbright's Welcome Services team, based on their interactions with prospective students while navigating the application process over the past year. The recommendations proposed here were refined and improved based on feedback from early draft readers: Tamika Connor, Jesse Lawson, Jarret McClain, Kip Nead, Carl Siva, and Karen Snow. Particular thanks to Karen Snow for her statistical analysis of student services messaging, detailed within Issue 2. Thank you to the CCC Chancellor's Office and CCC Technology Center for operating and developing, respectively, the shared systems discussed here. Finally, thank you to Ajita Talwalker Menon, Calbright President and CEO, for a series of conversations that led to the analysis and recommendations included in this memo.

Appendix A: Contact information page mockup (CCCApply)

Below is a mockup of a new first page of the application, as discussed in [Issue #2](#). This page collects basic contact information that can be shared with the college as soon as the page is completed. The questions that appear on this page could either be a fixed set for all colleges, or determined college by college, using the college-specific Supplemental Questions designed for this first page.

Welcome

Contact Information

Full Name [?](#)

Email Address [?](#)

Program of Interest [?](#)

-- Select --

Phone Number [?](#)

By providing your cell phone number you consent to receive text updates from Calbright College. Message and data rates may apply.

Appendix B: “Supplemental Questions” page mockup (CCCApply Administrator)





Below is a mockup of the recommended change to the “Supplemental Questions” page in the CCCApply Administrator tool, as discussed in [Issue #2](#). This mockup adds the “Position” column, which specifies whether the questions specified in the associated XML file are to appear on the first page or last page of the application. The “Last Page” option reflects current behavior, and the “First Page” option represents the recommendation for new behavior. The introduction of “First Page” supplemental questions would allow a college to collect arbitrary information from applicants immediately after beginning the application process.

Supplemental Questions

The Supplemental Questions page is defined using an XML file within an associated schema to enforce page rules and formatting. To export a page, click on the Download arrow icon ↓ in the corresponding row.

Note: Based on the Active status and the Effective Date, only one page of questions will display in the CCCApply application at a time.

[Import XML](#)

Page ID	Status	Application Type	Position	Effective Date	Actions
465	Active	Noncredit	First Page	11/24/2019	 
466	Active	Noncredit	Last Page	11/24/2019	 









[Previous](#) Page of 1 [Next](#)

Appendix C: “Rules” page mockup (CCCApply Administrator)

Below is a mockup of the recommended change to the “Rules” page in the CCCApply Administrator tool, as discussed in [Issue #2](#). This mockup adds the “Trigger” column, which specifies when each rule is to be run. The “Before Submit” trigger replicates the current behavior, where the rule is run when the application is submitted (i.e. after all pages have been completed.) The “Before Create” trigger represents new behavior, where the rule is run when the in-progress application is first created (i.e. after the first page, collecting basic contact information, has been completed.)

Rules

[Add Rule](#)


Name	Trigger	Order	Status	Created	Updated	Actions
send-to-CRM	Before Create	1	Active	08/10/2020	08/10/2020	 
reject-unless-noncredit	Before Submit	2	Active	01/10/2020	06/10/2020	 
reject-dual-enrollments	Before Submit	3	Active	09/30/2019	06/10/2020	 
reject-out-of-california	Before Submit	4	Active	09/30/2019	06/10/2020	 

Previous Page 1 of 1 10 rows Next

Appendix D: “Branding” page mockup (CCCApply Administrator)

Below is a visual mockup of the recommendation for adding a “Branding” tab to CCCApply Administrator page, as discussed in [Issue #3](#). From this page, a college could edit their custom domain, upload their logo, specify the name and sender for email messages, specify CSS styles to apply to email templates, and specify HTML snippets to be rendered at the top and bottom of each page in the application process.

Branding



Custom Domain
<https://apply.calbright.org> Edit

Email Sender Name
Calbright College Admissions Office

Email Sender Address
admissions@calbright.org

Email Stylesheet
<https://...>

Application Header HTML

```
<div><h2>Application to Calbright College</h2></div>

Questions? Call us toll-free at 1-833-956-0225.
```

Application Footer HTML

```
<link rel="stylesheet" media="print" href="...css">

<script
src='https://service.force.com/embeddedservice/5.0/esw.min.
js'></script>
<script>
var initESW = function(gslbBaseUrl) {
  embedded_svc.settings.displayHelpButton = true;
  embedded_svc.settings.language = "";
  embedded_svc.settings.enabledFeatures = ["LiveAgent"];
  embedded_svc.settings.entryFeature = "LiveAgent";
  ...
};
...
</script>
```

Appendix E: Contextual help mockup (CCCApply)

Below is a mockup that displays helpful information in context in the application, as discussed in [Issue #4](#). Currently, when help messages are displayed, the application form is covered and is not fillable. Here, the sidebar is not an overlay, so can remain open as the applicant fills works through the page. When a form element is “focused” by the mouse or keyboard, associated help text can be opened automatically, removing the need to click on each help icon to view the guidance.

Enrollment Information

Term Applying For [?](#)

-- Select --

Educational Goal [?](#)

-- Select --

Intended Major or Program of Study [?](#)

-- Select --

HELP

Select the educational goal that best describes your reason for this application.

Your Feedback

We are interested to hear from others within the California Community Colleges about the issues identified and recommendations proposed in this memorandum. *Please share your feedback with us via this [Memo Feedback form](#).*

Memo last updated: 2020-10-19 (35050c7)