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As we have written before, the goal of a CCMS will be to get work done. Therefore, the UI needs to present the user with their work tasks in a fast and understandable manner. When the task requires a document to be made (and this happens a lot), the CCMS will automatically present the user the proper document and complete as much of it as it can. But there are many more things that can be done to facilitate work that we will discuss below.

Dual/Widescreen Monitors

One of the simplest user interface upgrades for courts to implement is to install dual widescreen monitors. Nearly all work in the courts requires workspace for both the reference information and creation (data entry/document). This means that the CCMS should be able to be configured with a default automatic dual-screen or dual-window layout mode. The dual-screen capabilities should also allow the user to specify the browser instances or windows the system should automatically open as the user login default setting.

Context and Location Awareness

Judges ride circuits, but also in some instances so do staff. The CMS/EDMS UI should be able to detect where they are working from. Chambers, courtroom, locations in the clerk's offices, remotely are all normal places from which people work. And of course, the devices that they are using should also be discoverable. The systems need to react dynamically when this occurs.

But going back to location awareness, we have not seen is a system be able to react dynamically when say a judge or staff substitutes for another in the courtroom or in the staff role. This location awareness could potentially save a lot of time when connecting And, the systems need to be user customizable so that specific lists and information screens are the ones presented first. We would say this is a good thing for the user's dashboard to contain.

Documents and Forms

As we noted at the beginning of this post, the most common UI for the courts is one that facilitates working with documents. It is after all, what we all do. There are three ways that documents are created on our computer systems.

1. Automatic assembly from the case management system with templates for the most common documents
2. Word processing documents and forms that are created by the judges and court staff. And sometimes these document templates are shared as forms with the public

3. Web-based and guided forms systems both within the courts/CMS and with A2J

Let's start the discussion of word processing templates with a little history. In 2003, Microsoft added the ability to add "custom XML" to Word documents. This of course greatly facilitated the ability to merge data from the CMS into the documents. However, **Microsoft was later ruled to have violated a patent that had been awarded to another company for this tech.**

So, a workaround that we have used has been Apache POI, which is a Java Application Programming Interface for Microsoft Documents. The API let's one use a Word

Document as a template to merge data from an external source. In our example that has been CMS data from a MySQL database. After populating the template, we then open Word and the remainder of the "field data" is marked for the users to enter what is missing as well as edit the document.

Another word processing document creation approach is to use **Libre Office Word** templates. These documents are completely formatted in XML and I have found them easy to modify for data merge and then place the user into a full word processing **application for editing and completion. The documents can then be saved in both OpenOffice XML and Microsoft DOCX formats.**

Other options are to create web page templates or PDF documents. But a significant problem **with using these technologies is they more static in nature (see: Law's PDF Problem: A Short Manifesto). PDF is certainly editable with many tools today. But Features** such as automatic word wrap are lacking.

Last, on documents courts in large part have not even taken advantage of even simple document assembly software (such as **Hot Docs**) that are commonly used in law firms. This software stores and then assembles predefined paragraphs and documents sections that will be useful for more complex court documents.

Assisted Data Entry

Going beyond documents we are now seeing smart data entry and document completion software using "machine learning" (see our **"Clerk Bot" post from October 19, 2017**). These systems will not only be programmed but also "learn" which documents and what data is needed to be included. And I believe that these systems will be influenced by the common case processes and the data contained in the CCMS because records who, what, and when a document/event is performed.

In the courtroom, it will be possible for the machine to learn the most common text and language that a judge uses in a process. Think Alexa/Siri for courtrooms. We further anticipate that the judge/staff will be able to review and approve the document before it is further processed. It's not

quite “‘Google’ – schedule the next hearing for a week from Tuesday”, but we are getting there pretty quickly.

Again, please note that in this example the “AI” process will perform just as clerk’s do today, entering data and prepare the documents. In turn, the CCMS workflow processes will route the documents to the appropriate person or group for review and approval. This work is therefore presented as tasks. And it will likely result in court staff and roles reorganization.

Speech to Text

While we are “in the courtroom” we must point out that last year Microsoft Research announced test results that they had a system that “that can transcribe the contents of a phone call with “the same or fewer errors” than real actual human professionals trained in transcription.” We think that this is huge for the public in their ability to dictate the creation of documents for the courts.

This also means that we are very close to the audio courtroom record to be able to be machine-transcribed at least into at the least a first-draft “rough transcript” and following review and editing into an official record of the courtroom proceedings.

Timing

In Part 6 of this CCMS series, we discussed court case Tasks, Events, and Workflow. Besides the list of work to be done, the task list is should be presented to the user in an organized manner on the correct date and time. This timing is based on the court’s rules for case processing and has been a focus of judicial administration for the past forty years. The timing is continually being adjusted due to other case events or circumstances such a failure to appear. This “to-do” list needs to be very prominently presented to the user in CCMS dashboard or similar location.

It also needs to allow the user to adjust/reschedule/reassign that task before them to keep the case moving. It is OK for the task not to be accomplished in the time presented. It Needs to be documented.

And case processing timing can be adjusted based upon the status of a case. For example. A matter of law in the case has been filed with an appellate court. The primary case matter will then need to wait for that opinion to be issued. Therefore, the case status needs to be automatically adjusted to reflect the appeal and in turn, be counted not as active case but one that is waiting for another court. This fair approach properly reflects the court’s work in the statistical and judicial activity reports.

Court “Customer” User Interface (UI) and Online Dispute Resolution

The courts also must consider the UI for the customers in our courts. Courts are generally good at creating interfaces for the professional users such as attorneys and law enforcement. But we need to greatly improve our systems for the self-represented. Luckily this is now the focus of a great number of talented persons and institutions.

Other systems such as Tyler Technologies “Guide and File” application, I-CAN! Legal, and the California Court Forms provide options for courts to review. This is a very large subject and one that is better served by other websites and articles. We have provided links below:

And before we leave this subject we must also recognize [the Justfix.ny app](#) that is a terrific example of providing structure to guide the self-represented in a mobile phone app.

Natural Language AI

In a similar vein to the speech to text UI noted above, natural language AI interfaces or “chatbots” are developing very quickly. We believe that it is safe to say that the average citizen does not understand legal and court terminology, let alone court processes. To Address this, in the very near future we think that a system will be able to ask the “filer” to describe what their problem is, or what they think they want to do? The AI will, in turn, ask additional questions and provide information and assist in the creation of documents. And it will, as needed, be able to make a referral to a lawyer who can help. This will benefit already stressed legal services by preparing the information and focusing their time to work with the self-represented.

Natural language AI also has the potential advantage of being both multilingual and trained in the proper use of legal language. For example, we recently learned that because of the multitude of dialects in China, they are currently using this technology in their courtrooms.

An AI speech interface also potentially eliminates the “smartphone”/computer barrier for persons that don’t have those devices since any type of telephone will work.

These chat bot systems can benefit by using location services if allowed by the caller. In This scenario, the AI would ask the person if they wish to have the system figure out where they are located, and if successful, which courts and services are available for that location? The result of the conversation would be to provide the user with the correct information regarding court documents or communications options including text, e-mail, social media or yes, postal mail.

Preparing for Guided Systems and Chat bots

So, what does a court do to prepare to use this technology? We suggest beginning capturing the questions that are sent to the court via all communications channels. Some Courts already have online chat or email question services. But all courts receive telephone calls with the questions. Have the court staff keep notes on the questions or setup the ability to audio record them with permission.

Then build a library of the questions so that they can be “mined” by the AI/machine learning systems. In the short term, these question and answer dialogs can then be turned into the

“chatbots”. But in the long term, compiling the questions from as many courts as one can collect will provide the best “seed data” to create these systems.

Smartphones & Authentication

Smartphones already serve as the computer most people use. We should design the court UI for it.

For example, our standard NCSC smartphones, like nearly all others that have been made in [the past decade, can take a picture of a document and turn it into a PDF or even Microsoft Word document \(using OCR software\).](#)

Smartphone cameras can also take the accident and other evidentiary photos. My auto insurance app has a place to do that. The app can also use the phone's location to suggest the proper court and other applications can connect to cloud storage during the preparation phase.

An important need to be addressed for both examples is to provide an authentication mechanism for any digital evidence. This is where the potential for blockchain is just getting started.

Another function is for the smartphone to be used by E-filers to validate their filings via “two-factor” authentication. And it, of course, can receive notifications when say a filing is made by any party or receive reminders from the court.

Last, the smartphone user interface must be incorporated into any court website design. This is called “Responsive Web Design” and has been around since at least 2011. It allows the web page to adjust to the type of device that is being used to view. Wikipedia explains at

https://en.wikipedia.org/wiki/Responsive_web_design

Judicial Tools and Decision Support

We have written many times here in the CTB before about “E-Bench/Judicial Tools’ ‘systems development. The great benefit of these tailored user interfaces for judges is that they can have a significant impact upon both the efficiency of the courtroom but also the quality of decisions being made. This is because first, more information can be displayed; second, it can be more timely and hence more accurate; and third, it can change based

In addition, there are other tools that assist judges with legal references have been developed. One such tool is Case Text (screen example is shown below) that helps by automating the law and case reference connection. But there are many other systems that have been created by the legal publishing vendor community.

And another example in this vein comes from the UK Courts where they have worked to create the Case Lines digital/cloud evidence platform. E-Signature and Verification In recent years we have written many times about the need for courts to digitally sign and in turn, allow for online verification of their documents and actions. Examples from Brazil [here](#), and our series of articles on the potential use of Block Chain technology [here](#) and PKI Signatures [here](#).

Accessibility

Last but certainly not least, the use of technology to provide UI to improve court accessibility. Many courts have adopted the use of video conferencing for both American Sign Language and Spoken Language Support in courtrooms where that expertise is not locally available. We also learned in this article about the [“Hand Talk” app](#) that allows for “better communication between deaf and non-deaf people”. The app converts spoken words [on a smartphone into sign language](#). [There is a YouTube video demonstration available here](#).

People

In conclusion, a CCMS exists to get work done as we noted at the beginning of this article. But just important, a related goal is to free time for court staff to, we hope, be able to answer the telephone. In other words, provide service to the public. As budget/staff cuts have stressed courts throughout the country, the tools discussed here can allow time for people who need to talk to the court to do so. We fully embrace that vision.

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