CCMS (Court Case Management System)

Introduction

Introduction

Bangladesh has a total of 3684728 case backlogs in all types of courts across the country. The supreme court administration has send a case statics report to the media that including all backlog of cases in the country. The statistics show the Supreme court is holding 512685 case backlogs in total – 489068nusnder the High court division and 23617 under the Appellate division. Subordinate courts and tribunals are holding the remaining 3172043 case backlogs. Pending cases are not only a great source of suffering to justice seekers, but are also a problem for courts since they can increase workloads and take up space and resources. Earlier, on April 28, 2019, Chief Justice Syed Mahmud Hossain expressed concerns over the number of pending cases in the Supreme Court, saying case backlog has reached a critical state.

The following case are still in the same format as they were before to solve this issue the whole judiciary system should work with a appropriate software or solution where each and every case will be sorted with details and the large case will be work on portion by portion. The system will be developed or organized with a standard SDLC (Software development life cycle) to enhance the solutions robustness and accessibility.

The Court Case Management System will be a system where all the cases will be availabe for case study and solve purposes

Source: 3.7 million cases in backlog in Bangladesh courts | Dhaka Tribune

Part 1: It’s About Change

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Court Case Management Systems are creatures of the technology available. This first in our series reviews changes in CCMS based on advances in database management systems, information presentation, and communications, and cost electronic storage.

Warning: A history lesson on computer databases and CCMS follows in the next section:

In the late 60’s and 70’s systems were often punch card based and were limited to mainly producing name and case indexes. I remember looking through huge green bar printout books that were produced by a computer simply because they could put names in alphabetic order. Of course this was a huge benefit in comparison with card files or name lists in docket/registry books.

Later, starting in the late 70’s the green screen mainframe systems were developed. The Databases were most often in flat-file format and they were able to hold the case event registry and again names. But these systems often required the same name to be repeatedly entered for each case. In such systems one would see entry after entry linking a name (hopefully spelled the same) to different cases.

In the early 80’s advanced systems began to use index-sequential (ISAM) databases that accessed data on the computer disk either via a “B-Tree” or in IBM’s implementation visas (virtual storage access method).

Both of these database systems had a lot more power as one could access multiple data tables (think names and cases) but were often very hard to change as one had to convert databases when a data field was added or changed value or validation (the list of acceptable data).

But by the late 1980’s relational databases (RDBMS) were being widely implemented; and that is where we are today with several important additions that will be noted below. RDBMS had a lot more flexibility and power. And because relational databases could handle data complexity and relationships much better, they could more accurately reflect the real world that courts deal with every day. And we all know that the real world is a very complex place to describe in court case data.

Six Other Technology Limitations CCMS Had to Design Around

1. Information Presentation. During the very beginning of the judiciary system the information technology was so readable and accessible for sharing the case information as well as case files. There were a lot of file for a single case document and most of the times the court staff or employee lost very important case document. As a result, the case presentation during trial the judge and the other staffs had to face lots of problem.
2. Slow data transfer rate. The lack of slow data transfer rate cause lot of problem after the digitalization of court system. The employee faced various issues like file sharing and file downloading was very common in the process.
3. The cost of electronic storage. Computer disk storage was incredibly expensive until recent years. So much so that it wasn't even put electronic documents as an element. Earlier the price of a 80 GB Hard drive was 10000 taka per piece. The product after sells support was also weak after the instructions.
4. Lack of enough man power: The lack of enough employee in the court room as well as office the office work and the service for the citizens or public. The shortage of man is always causes the extra pressure working hour and also the file processing time.
5. Lack of computer expert employee: when the whole country is turning into digitalization the judiciary is still stuck in the same old file process system. The lack of computerized system as well as then lack of expert computer employee the whole judiciary system is still in the same ways.
6. Internet accessibility: The internet accessibility is in the court office as well as court room is not available in our country that time. The internet functional working process was very hampered during that condition of period.

Pciture: CCMS 1

Process, Organizational Change, and Expectations

We teach in our ICT Technology and Project Management class that court administration has three tools:

- process,
- organization, and
- money for more people

This results in a natural tension with court information technology and court administration because process and organizational change has been difficult to implement in CCMSs . One often hears that there is a need for considerable customization in a CCMS, either newly installed or later modified.

We believe that this is a result of IT not appreciating the continual tinkering that judges and court managers do to improve management processes. In industrial processes it would be deemed continual process improvement. In courts it is often viewed as not following court rules or not

implementing standardization. Further, it is in IT challenge for processes and organizational “customization” to be done by very small units such as the judge’s chambers, which may affect other units around the court.

Now with advanced relational databases, along with configurable information display and workflow technologies, CCMSs have the flexibility (if designed correctly) to more easily implement the process and organizational changes demanded by the business users. Please note that this article presents these concepts generally, but we hope that it partially explains why courts have had to purchase different generations of case management systems over the years. And we also hope that it sets the stage for the series to follow

Part 2: Does it help you do your work?

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Court case management systems can, as we have done many times, be described as the accounting system for cases. Of course this ignores the fact that CCMSs are actual accounting systems for money as well. And this will be discussed in a later article.

But CCMS is now more than just a place to track the actions of cases. The tracking and recording approach function of CCMSs is done performed in the tradition of the docket/registry books. As defined in Wikipedia for Docket (court):

“The term originated in England; it was recorded in the form "doggette" in 1485, and later also as doket, dogget(t), docquett, docquet, and docket.* The derivation and original senseare obscure, although it has been suggested that it derives from the verb "to dock", in the sense of cutting short (e.g. the tail of a dog or horse)*; a long document summarised has been docked, or docket using old spelling. It was long used in England for legal purposes(there was an official called the Clerk of the Dockets in the early nineteenth century), although discontinued in modern English legal usage.” Footnote: Oxford English Dictionary 2nd ed. Definition of "... brief, summarized statement ... abstract, abridgement, digest, minute" described as obsolete and historical. "A memorandum or register of legal judgements". "A list of causes for trial" given as U.S. usage

So the purpose was to summarize the documents and actions that occurred in a court case. But for what purpose is this done? Is it simply for reference? Is it for court work statistics? Is it to avoid fraud or error in the instance when a court document goes missing either by accident of intentionally?

Certainly the integrity of the court case record is paramount. When legal documents are not recorded, they can (as I have personally observed internationally) become hostage of the clerk demanding bribes to perform the recordation, thus hindering movement of moving the case forward. But there are many courts that have operated without this secondary docket/registry. These courts often use the case jacket (file folder) to record the contents, and then move it from place to place as a queuing system to distribute and prioritize work. In a manual system this is very efficient because all the information is literally at hand. In many courts these physical file queues are contained within the judicial chambers. And in those instances the clerk’s docket/registry really has no idea what is happening with case processing, let alone the court’s caseload statistics.

In many instances we find that only the basic recording function of a traditional paper docket/registry is performed. We often refer to these systems as “black holes”. Data goes in but never comes out.

CCMSs should have automation system which can meet the traditional goals of recordation and,

serves as the foundation for all court processes. But the other example above shows that courts also need a work queuing system as well. And why not be able to connect all manner of information, such as all the cases for a particular attorney or party? How about calendaring and scheduling as well as tracking money? Statistics, reports, and documents too.

If the CCMS does this work, then it helps judges and court staff to accomplish their daily work. And that should be the point of it.

Part 3: The Court Organization, Users, and Roles

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There have been serious design deficiencies in Court Case Management Systems. This is a bold statement but one that has been borne out in the real world when for example a state wide or national implementation finds that they have to design a separate customized system for the big urban courts. That's why the basic CCMS design will take this into account from the beginning.

Let's first look at the basic differences in courts and the tension that a "standardized system" model introduces. Court administrators (presiding judges or actual administrators) have very few tools to work with to manage and improve their operation. These tools again as mentioned in Part 2 of this series are:

- Process
- Organization and
- Money for more people

We will focus first on court organization which of course is made up of people (and yes, judges are people too). In each court people have work roles (duties). And those work roles will vary based on the size of the court and its caseload. A court work role might be to accept incoming cases while others are scheduling hearings or presiding at a hearing or trial. Thus in a small court one person will have multiple roles while in a large court one person will have one role. We see this in many places where a judicial "commissioner" may do nothing but criminal release hearings as there.

So the concept of work roles is the key to system flexibility and scalability. In turn, once the work roles are defined (such as case creation, notice production, etc.) they are assigned to the court's organizational structure definition stored in the database. The organizational structure may for example include court type, location (county/city), branch, division, department, chambers, unit, etc. If these distinctions can be configured into the system, the system is capable of organizational scalability because it captures the fact that in small courts there may only be a few organizational units, while in the large court there will be many. In a small court multiple roles can then be assigned to a specific organizational unit. And in the large court, a scheduling role for civil cases may be specifically assigned to a calendaring/scheduling unit (or even more specifically, a civil case scheduling unit) within the court organization.

Next, persons (as stored as system users with unique identification, security level designation, and digital signature) are assigned to the work roles. Groups of persons may also be created for shared work roles.

We have tried to capture very generally the relationships in the graphic below.

Now that the system should know the organization, the work roles, and the person or groups that do the work, the CCMS can send work tasks to the right place . This means that the system can also monitor when a person signs in and, if not, can potentially
automatically reroute work to users in the group or to a person with a “backup work role” assignment.
Lastly, we go back to the issue of organizational scalability. This design approach allows one system to handle all levels and locations of courts.(organizational units), case types, and persons, because it allows all the organizational elements to be localized for each court. Thus it avoids the need to have a special version for large courts that reflects their more complex organization and staff role structure. And it allows the organizational elements to be redefined as needed again and again at each court level and location within the jurisdiction. The result is that it empowers court managers to adapt their judges and staff as needed because the CCMS supports different work and organizational approaches in the unending need to improve court operation.

Picture: CCMS 2

Part 4: Relationships and Groups

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Relationships of judges to cases, staff to judges, attorneys to cases, attorneys to case events, cases to one another, attorneys to law firms, parties to one another, and many other permutations are important to capture in a Court Case Management System(CCMS). This is because information captured about relationships can greatly help both the court's case administration and decision support functions. But it is also one of the most difficult concepts to build into a CCMS because of its complexity.

An example of relationship complexity cited by our NCSC colleague Lawrence Webster of a juvenile court proceeding that may have as parties the prosecutor, three children of one mother, and three different fathers. There may be many more participants. Each child may have a separate attorney to represent each child, and a court-appointed special advocate (CASA) may be appointed for one, several or all children. (Some states have guardians ad litem who may or may not be attorneys, to represent the best interests of the child, not necessarily the child itself.) The mother will have an attorney representing her. Fathers participating in the case may have their own attorneys. Add to this constellation of case participants some number of social workers and investigators, and the result is a complex set of relationships that many CCMSs should able to easily handle when the court needs to give notice of hearing or send a copy of a consent decree.

The second related concept is groups. Group functionality in a CCMS should serve greatly increase system efficiency. For example, court session scheduling can be more efficient by organizing and referring to the judge's courtroom team as a group. Then a single functional call to that group in the database can associate those persons to that court session. But more commonly, cases may be grouped. In a court that creates one case per charge, one traffic stop may result in a traffic charge (the probable cause), seat belt and insurance violations, and a DUI charge resulting in four cases total. These cases need to be scheduled and handled as a group. The defendant may have another case or set of pending cases related to another incident, which may become part of an overall plea agreement, which need to be scheduled together. And the defendant may be on probation, for which the new offense(s) may be grounds for violation of probation. Thus when a motion is received that applies to these grouped cases, the CCMS should enable a single docket/registry entry for notice of hearing, and generation of a notice, to automatically apply and be recorded in all of the cases based on the grouping, rather than individually, case by case.

In complex civil litigation, a case may have multiple plaintiffs/ petitioners and multi defendants/ respondents (claimants). These parties and counter-claimants, cross-claimants, and third-party claimants may be involved only as to certain claims, so only parties involved in motions concerning certain claims need be noticed for court events or sent court orders. As certain claims are amended, adjudicated or settled, the CCMS should track the status of those claims and which parties are involved. Again, many CCMS should be able to easily handle the patch work of

claimants and claims.

These examples show what everyone in courts knows -- relationships and groups are dynamic and complex.

It is therefore challenging for relational database designers to be able to reflect this complexity in the CCMS. Most systems that we have seen attempt to address this requirement are often content to simply create a group table for a specific area and define it via a single linking number or name. This is the concept behind the single “offend identification number” in criminal justice systems.

The issues do not end here. There is also the need to define, for example, not just yes-or-no relationships described above, but also the term or length of an attorney relationship (for example, starting and ending dates for an attorney in the prosecutor’s office and for limited representation of a client by an attorney only for certain matters or hearings), and attributes (ongoing, temporary, formal employment) and/or definition of a relationship (employee, father, member, friend, colleague, acquaintance, etc.).

Very early in the development of the Internet a similar need was identified. So the concept of meta-tags was introduced. And since there is no limit to the number of metadata that could be associated with a record, this provides great flexibility in defining the relationships and groupings of case-related entities.

Parenthetically one might argue that metadata has no place in relational databases. But this view is now dated since the major relational database systems from Microsoft, Oracle, and IBM can all handle XML data natively in their systems.

Thus our court relationship data needs are mirrored on the Internet. Great mind including the founder of the World Wide Web (the www typed at the beginning of most URLs), Sir Tim Berners-Lee, have envisioned a graphical connection called “Marbles” that provides a visual representation of relationship connections (see the graphics at the project website: http://marbles.sourceforge.net). It’s clear that new tools are needed in CCMSs should have to facilitate judges and court administrators managing relationships and groups.

Part 5: System Configurability and Adaptability

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Judges and court staff need to automate and manage their processes and that has led to a series of developmental steps since the beginning . The current state of the art is CCMSs will be that much configurable at the process level, and raises the question of what it means for a case management system to be adaptable.

Picture ; ccms 3

1. **Purposes and Roles of Court Case Management Automation.**

Our good friend, Judge Dory Reiling in her article in the June edition of the International Journal for Court Administration noted that the Consultative Council of European Judges (CCJE) identified that the most pressing concern about court automation "…is the risk [that] IT implementation poses to judicial freedom to determine procedures and to dispose cases." This concern regarding the role of court automation in court administration and judicial process is certainly shared by state courts. This has in turn has manifested itself in several different approaches to court case management automation.

The first approach will to use the CCMS as only a data repository. We often call these "passive" systems. But the problem is that the passive approach does not result in much benefit to the court's judges and staff except for the ability to track current inventory and generate case statistical reports of cases filed and cases disposed. We then in turn hear the complaint, "We spent all this time and money on automation and it has not resulted in any operational improvements."

A second approach will to try to develop "uniformity" in organization and court processes. This is the classic engineering method of standardizing operations. The problem is that different courts are different sizes, handle many different types of cases, and have different organizational structures or judicial management styles. There is an assumption that uniformity can be imposed (or at least mandated) from the top down. And this in turn leads to systemic paralysis as changes are often required to be approved by a committee, given that "reasonable minds can differ," or failure to achieve uniformity in most areas of operation.

And third, at a state level the court system will often implement different versions of the CCMS in different courts. Most often we see large metropolitan jurisdictions have their own separate CCMS or version of the system. But operational variations even among courts or counties with similar demographics can result in significant system work around to suit local preferences. Naming and

counting things differently results in difficulties in searching and coordinating data and statistical reports with the remainder of the state.

2. **Highly Configurable Systems.**

The CCMSs will be highly configurable. Some useful concept to address these problems of court automation will more reliable in CCMS

Configurability provides greater ability to adapt a system to fit court business processes and business rules, rather than force judges and court staff to change the way they conduct business to the way a CCMS works.

3. **Adaptive Case Management.**

Giving judges, clerks and court staff the ability to perform and manage their work effectively and efficiently is the purpose of court automation. Related to the concept of configurability is adaptability of a CCMS should be able to accommodate a process change “on the fly.” In recent years the concept of Adaptive Case Management Systems (ACMS) should be emerged that recognizes that knowledge workers are best served by technology when they have case management tools that adapt to business needs which may be non-routine or unpredictable. A concise description of ACM found on slide 4 of this presentation is:

A productive system to support the organization and process structure It becomes the system of record for the business data entities and content involved. All processes are completely transparent, as per access authorization, and fully auditable. It enables non-technical business users in virtual organizations to seamlessly create/consolidate structured and unstructured processes from basic predefined business entities, content, social interactions, and business rules. It moves the process knowledge gathering from the template analysis/modeling/ simulation phase into the process execution phase in the life cycle. It collects actionable knowledge—without an intermediate analysis phase—based on process patterns created by business users.

One might also look at Slide 9 of the presentation that identifies 9 Major ACM Challenges.

Co-author of this article, John Matthias has also published articles in two books, Mastering the Unpredictable and Taming the Unpredictable on the Adaptive Case Management subject area that we have noted in the CTB here and here before.

Very generally, the point of ACM is that the systems should provide tools for differentiation and individualization to help their users to accomplish their work. This is in addition to Business Process Management Systems (BPMS) and the traditional CCMS will seeks to narrow the design functionality and create a control system and user behavior.

Part 6: Tasks, Events, and Workflow

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Task-Oriented Interface

There are two parts to the concept of a task-oriented interface. This first concept is aimed directly at using the interface to help the user accomplish their work (footnote 1). For example, if the court clerk needs to complete a form to send to the attorney or parties participating in a case, then that form should also perform the data entry function. Another CTB article, "Documents as a Two Way Street" discusses this function in more technical detail. A second example is providing a single screen or a limited amount of navigation (such as tabs) to perform a discrete task, rather than forcing the user to navigate through a series of screens via codes or function keys.

The second part of the Task-Oriented Interface concept is the ability of the system to create and maintain an up-to-date and prioritized list of work tasks to be performed by each judge or staff member, a work queue. In a manual system, or a less functional CCMS, these lists have to be manually maintained on either a desk calendar or perhaps in a stand-alone program such as Microsoft Outlook or a "To-Do" list in Word or Excel. And if the court has paper case files, a "task list" is likely to be a group of files segregated by action date, or by task that needs to be performed, such as warrants to be issued or court-generated hearing dates to create notices. The stack of files moves from desk to desk.

But providing a task-oriented interface in a CCMS, based on the event and work flow orientation discussed in the next section below, can automatically present the list of work tasks to be accomplished that day in priority order. So instead of searching the system, or printing are port (or looking on their desk calendar or to-do list), system users should be able to simply click on the item in their task list to create the notice, assign the case, open the calendar, and perform any other function needed. And, if the person doesn't log in that day - perhaps they are ill - tasks could in turn be sent automatically to their supervisor or presiding judge. The supervisor can also use tasks lists to monitor volumes of tasks of various types, identify bottlenecks, and assign additional staff to tasks lists where more hands are needed, dynamically. Typically, each task list would be shared by two or more judges or staff members, to ensure coverage. Task lists are usually organized by task type, within roles (counter clerk, financial clerk) or sometimes across roles, depending on the size of the organization.

But how are these task lists automatically created for each user or group of users? From event triggers!

Event-Driven Workflow

Court processes are event-driven, and there are three kinds of triggers. First, external events

trigger case activity. Everyone knows that courts record events in docket/registry books that have occurred in the case. More specific examples of an external event trigger are the entry of the receipt of a document, a receipt for payment of a fine or fee, a hearing held in a case, and many, many others where an event triggers some court activity including entry into the docket/registry.

Second, actions by another user trigger case activity. As noted above, an event trigger can be a completed task such as creating a document or scheduling hearing. Another example is a counter clerk who handles a request for a bond refund; the accounting supervisor must review it and either approve or deny it, and the decision goes back to the clerk to perform it or tell why it can't be performed.

Third, an event trigger can be a change in a condition or state of a case, as when a deadline passes. Examples include a defendant failing to appear or pay a fine installment, and an attorney not filing a response to a motion pursuant to a scheduling order (which means that the court can proceed to decide the motion).

Picture: ccms 4

What occurs after one of these event triggers is a series of tasks that carries the event forward in all of the appropriate ways for the event. Workflow is automation of a business process; and after a triggering event, there are tasks in each process that complete the process – pass documents, information or tasks from one person to another – according a set of rules. Then the case waits for the next event to occur.

An analogy would be to think of such a series of tasks as being like toy "Lego Bricks." Each task is represented by a brick. As most know, these bricks can be connected in any order and kind of sequences, depending on the goal. And the "workflow system" represents the instructions to connect the sequences or groups of bricks.

Again going back to the first point in this article, the CCMS can be use event information to identify or create the next task or set of tasks to be done according to the court rules or the case plan. The best system design allows for flexible connection of the events to the tasks based upon not only the court rules but also on the organizational structure and the needs of the judges and the local court staff. This allows the court and system to be able to change and reflect process improvements as they are implemented in the future.

Tasks and Events as Workload Measures

In addition, a task/ event approach allows for better and more accurate measurement of court work load. The standard procedure in weighted caseload assessments uses subjective estimates of time spent during a workday doing fairly broadly-defined categories of work. Alternatively, counting events as work performed by judges or staff, and tasks for future work, can provide a much more accurate view of the type and amount of work performed. Tasks and events could also be assigned "weights" depending on the amount time it took or is projected to take to perform the work.

In August, 2004, the United States Federal Judicial Center reported that they had completed their new case weighting evaluation system based on event measurement. They Reported in their

newsletter, The Third Branch:

“The event-based method has several advantages: the FJC was able to complete its study in less time than the previous study of case weights, future updating will be easier, and, as new types of civil and criminal filings develop, the method allows greater flexibility in developing case weights for them.”

Part 7: Criminal Charges and Data Sharing

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Charge Tracking

Criminal charge tracking is a conundrum in the state courts for many reasons. First, it is complex because the criminal justice system is complex, possibly requiring reference to both state and local charges in a single case. And, second, because of the way that criminal history system rules work, the CCMS must have to continue communication and data sharing with justice partners.

Complexity comes in many forms. First, legislative statute coding should be stored and linked to the charges entered against defendants. Statute codes are often updated by sub sequent legislative action to amend different aspects such as a change in associated penalties. So the CCMS should have beginning and ending effective dates associated with the statute code. And older statutes and penalty schedule must also be maintained intact that are applicable to crimes that allegedly occurred during a previous time period. (The same applies to municipal ordinances.) In addition, there are national charge codes that must be associated with the state statute codes for reporting purposes. These codes may or may not match how a state has organized its state statutory law. So some national codes may map to multiple legislative codes.

Second, statutes have penalties associated with them and may also have other associated factors, such as penalty class (Misdemeanor 1st degree, Felony 3rd degree, etc.), charge enhancers (such as when a gun is used), suspension of particular licenses, and specific surcharges that will be applied if found guilty.

Third, most often charges are associated with specific persons. However, corporations and other organizations may be criminally charged also. Therefore it is recommended that not only the three name “western convention” (first, middle, last) should be supplemented with a “full name” that is a long text field allowing for capture of other cultural name structures, such as “XYZ Corporation.” My favorite example of another cultural name structure is persons from Brazil (Portuguese structure) who often have five or more names with their surname highlighted in the middle, increasing the difficulty of identifying the best surname to be associated with the charge.

Criminal History and Statistics

Criminal history database systems (separately at the local, state, and federal levels) will be provide many challenges to the CCMS. There are historical and technological reasons underlying these issues that are beyond the scope of this article. We can identify, however, some characteristics of charges in tracking them statistically.

First, charges in many jurisdictions that were originally alleged by law enforcement may not be the

charges that are sent to the court by the prosecution. But courts need to be able either to receive every charge that has ever been associated with the person for the case, or be able to back-connect to the charges in the partner justice agencies. If every charges received, the court needs to change the former charge status to “dismissed,” “not charged” , or some other status designation such as “superseded by grand jury indictment.” Those former charges would likely not be shown as part of the case record. In other words, they are for administrative and statistical purposes, such as connecting the arrest charges reported by law enforcement with the charges prosecuted by the prosecutor and with the charges convicted in court.

Second, the “lead charge” is often associated with statistical counting. Now, as you know, charges may change after law enforcement originates the charge, when the prosecutor files the charge with the court. The “lead charge” may also change after a plea bargain is agreed and the final conviction is recorded.

It is simply a messy situation that consumes a lot of time and effort by all members of the justice community.

Pciture: ccms 5

Coordination

As stated in the NCSC Criminal Functional Standards

“As has become apparent in recent years, the criminal court cannot function in an information vacuum that excludes the criminal justice and non-justice agencies. Interfaces must exist with law enforcement, prosecution, public defense, and corrections, as well as with non-justice agencies that maintain records on such topics as criminal spousal and child abuse, sexual predators, fire arms ownership and usage, and victim information.

Case management systems center on the disposition as the primary indicator that a particular case has completed its journey through the court process, although there are variations indifferent jurisdictions. It is important to note, however, that the use of disposition information does not end when the courts dispose a case. Each state has or is developing state wide repositories of criminal history information. This collection of criminal history information contains information on the individual and their relationship to the criminal justice community including information on arrests, charges, and disposition of cases. Case management systems must be capable of passing case disposition information to these state repositories for the purpose of "clearing charges" on the information systems maintained by the law enforcement agency that performed the arrest and who provided the initial charges to the Prosecuting agency.”

Part 8: Criminal Case Sentencing and Consequences

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When most think about the “case closing” function in a criminal matter the sentence and sentencing process are the key focus. However, if an observer only looks superficially at the requirements, like an iceberg, only a small part of the court’s data, reporting, and other needs are readily apparent.

We have seen a lot of sentencing modules in case management systems built with database technology. But only one that is both incredibly detailed and complex has been successful in meeting the long term needs of the court. Others we have seen captures the core information that is of interest for statistical and key data reporting but these miss all of the detail that can be included in a criminal sentence.

But as in the “Law of the Instrument” that Abraham Maslow said in 1966, “I suppose it is tempting, if the only tool you have is a hammer, to treat everything as if it were a nail.”

Before we explore some other potential solutions, we wish to remind everyone of the excellent work that was done by a national committee for the GJXDM (Global Justice XML Data Model) on Disposition Reporting information exchange in 2006 (please see both the Disposition Reporting section as well as Charge Document). The report provides a compilation of data elements compiled from across the nation that can serve as a checklist for design.

Sentencing Data

Critically speaking, it has become apparent therefore that a relational database is probably not the best “instrument” for describing a criminal sentence that in its initial form is a document.

First, there is the fact that the sentencing document is the original source of information. Therefore, it should always be available to anyone who needs the information. But you might say that my jail, corrections, probation, drug treatment, etc. need the data in the sentence document for their own needs? This again is where we can use XML.
Sentencing forms are often used to support the data needs of the justice community. If there is a form, there is the ability to assign an XML field to it. Again the argument is what about the description parts of the form. Certainly those to can be identified and, today we can apply either programmed XML tagging, search, or even hand-coded XML to those sections. This is really no different process or work-wise than performing data entry.

Second, what about the complexity of relationships between the different parts of the sentence? For example, what if some jail time depends on payment of fine and staying 500 feet away from a person for X amount of time? So the dependencies have to be modeled and mapped. This is easy

for a human brain but difficult for an information system unless one possibly uses an alternative data structure such as a three-dimensional array. The array can connect each of the four parts and thus if one of the aspects of the sentence is not performed, all parts are affected. And even this four connection example is woefully inadequate to describe reality when one must connect persons in criminal cases with civil and domestic relations matters and the complexities involved therein.

So while an array approach bears consideration, there are likely other ways of doing this and we look forward to hearing of them from our tech friends in the future.

Last, this is why we are starting to use the term "consequences". Is staying 500 feet away from someone a punishment or something else? As discussed above, it depends.

Risk and Hard Data

Another aspect of sentencing in the USA is the presentence investigation form. The State of Missouri has been doing some interesting work that could be considered as part of any data sharing approach for criminal sentencing information.

The Smart Sentencing concept is a data driven feedback loop for the consequences ordered by a judge. This is similar to drug and other problem solving courts in that it connects the sentence to the results. So instead of relying upon personal experience of the judge or probation officers, which as we have seen is often flawed (the "Moneyball"example), it relies on hard data.

The article goes on to describe how the system provides information to the judge, but does not suggest the actual sentence. Again, this is a data driven approach that has been proven to be successful for almost two decades (and is also being implemented in Ireland-http://www.irishsentencing.ie/). Please download (PDF) and read the article for a much more complete description of the system and results of implementation.

Monitoring and Communication

And last, this article has not addressed the issues involved in the court's monitoring of sentence performance. The financial aspects will be discussed in a later article in this series. But performance also relies upon effective communication. This is the work of NIEM and GJXDM to feed the data into the court's CMS so that it can provide the performance audit that is expected by other parts of government and the citizenry.

Part 9A: Scheduling and Calendaring

Page 1

For purposes of this article, and as previously defined in the NCSC Case Management Systems Functional Standards, we will refer to “Calendaring” as the act of defining the availability for court events to occur in a future date and time, and “Scheduling” as the act of assigning the events. We also have to differentiate Scheduling and Calendaring from normal court tasks/events in that these events require face-to-face (F2F) personal (well maybe video, V2V?) interaction. So for this article we will be focusing on those events to differentiate from other tasks/event work discussed in Part 6 of this series.

But before we get into the technology issues, let’s quickly discuss the goal of a good calendaring and scheduling system. It is simply to maximize the use of the scarce resource of judicial time and use that time to efficiently adjudicate cases brought before the court. As many of you know, the practice of court management has focused on calendaring as one of the key areas of study and innovation in the past. Individual, master, hybrid, and specialized calendar systems have been designed and effectively implemented. And overall the lessons from these various approaches have been included in the subject of case flow management.

Pciture : CCMS 6

Now back to CCMS design discussion. The analogies most often used for the calendaring function will be one of setting up a series of “buckets” or “slots". These buckets represent the amount of work events that a court normally expects to hear during a specific time period. So buckets will come in different “sizes”. Some buckets are set up to hold a specific amount of time while other are designed to hold a fixed number of events. A courtroom would have for example a one-hour bucket of time formations, followed by two hours for hearings in the morning, and a three-hour bucket for trials in the afternoon. And of course the buckets will change based on the day of week, or even a full week or month time period (in some places this is known as a court “session “or “sitting”). As you might guess, hearings are usually fairly short proceedings and therefore a hearing bucket with counts as the measure might be appropriate; while a trial bucket might be defined with time parameters, perhaps extending over multiple days.

Pciture ccms 7

The “buckets” can control the type of event that can be scheduled in that time period. Calendaring the “bucket” parameters (i.e. the number, type and size of buckets) is often done on a set schedule, such as quarterly or semi-annually, and/or when judicial assignments change. Buckets can be set up for a judge or a courtroom, and may include interpreters, courtroom staff such as a clerk, bailiff and court reporter, and combinations of these resources. But a better practice is to associate buckets with work roles as discussed in Part 3 of our series

. This allows for easy association/substitutions when the persons fulfilling those roles change such as when one person is unavailable or when judge assignments change. And roles can also be groups which allow say a judge's courtroom team to be associated with a bucket. Roles and groups can also be used to define the participants in a master or hybrid calendaring system.

Picture: ccms 8

Now the reason for creating predefined buckets is to allow the CCMS scheduling function to automatically search for the next bucket (or buckets) that has time (or counts) available. The search then either automatically schedules the event in the bucket represents options to the person scheduling the event. But the search will also need to apply search control parameters regarding the number of future work dates/buckets to examine in the database. This is because automatic scheduling without controls could potentially return date that violates law (such as speedy trial statutes) and/or the court's scheduling court rules; as well as possibly being very slow because of an excessive search. If the search fails to find an empty bucket, it must return a message to the user so that an alternative actions can be taken. A user might be prompted to examine specific date/time buckets to see the type of matters that are scheduled, and decide to "overfill" that bucket. The system must also allow for this manual override. And a "smart" search results messages should assist the user by suggesting the buckets to examine first.

In a large local court, state, or national system the buckets may also be restricted by court type/ jurisdiction, court division, and location. Again, this is a reason to have these factors defined in the court organization part of the CCMS as we discussed earlier in Part3 of this series.

Last, the issue of conflict of interest checking is often asked as part of the calendaring and scheduling functionality. This depends on whether the case is assigned on an individual or master/group calendar. If the case is assigned in an individual calendar process than the predefined conflicts that are associated with a specific judge are normally checked.

Then the case is initially set. But if the case is being heard as part of a master or hybrid calendar system then the conflict of interest checking may need to be done as part of the scheduling function.

So these will be the CCMS functionality basics for court calendaring and scheduling. In the next part in our series we will explain why this functionality must be extended and expanded.

Part 9B: Scheduling and Calendaring

Page 1

Calendaring and Scheduling are one area of court case management systems that suffer from a lack of focus and imagination in applying automation technology. While other industries have made great strides in very similar areas such as manufacturing supply chains and airline capacity planning (and don't say that those are simpler problems than court scheduling), courts have by-in-large decided just to throw staff at the problem. *In this post we will share some of our ideas on the subject.*

Complexity Measurement and Projection

First, while the event being assigned to a “bucket” will have a default value (either a counter time amount) all of the case scheduling systems that we have seen treat each of these events the same without regard to the complexity of the case.

Co-author of this series, James McMillan along with Judge Carolyn Temin of Pennsylvania, published an article in the Spring, 2011 edition of the American Bar Association’s Judge’s Journal (membership required) titled Dynamic Case Weighting: Using the Data We Have to Manage the Courts. In that article the authors argue that measures of case complexity can be derived from the case management system data. The Following factors were identified (data items prefaced with the asterisk (*) are very often contained in CCMS):

Complexity Factors in Criminal Cases

*Number and seriousness of charges
*Number of criminal charges combined in one indictment or joined to be tried together*Number of defendants
Criminal history of a defendant
*Number of documents submitted in evidence
*Number of witnesses
*Witness availability
*Number of exhibits submitted
*Jurisdictional issues
*Court/jurisdiction case time history
*Interpreter required
*Document translation required
*Multiple-judges involved
*Jury trial
*Courtroom availability
*Self-represented defendants

*Systemic problems (resources unavailable)
*Novel legal issues
*Expert witnesses
*Number of expert witnesses
*Number of issues requiring expert testimony

Complexity Factors in Civil Cases (in addition to above)

*Amount in dispute
*Subject matter
Number of relationships between defendants, victims, and witnesses
Complexity of relationships between parties and others
*Party history
*Counsel history
Party financial capability

And so we believe that it is feasible to correlate even just a few of the easy-to-obtain data points with the amount of hearing/trial time to be consumed in order to be able to create data-supported projections and a more accurate automated scheduling system.

Participant Oriented Scheduling

The success of the automated participant scheduler implemented in the Travis County I-Jury system has taught us that, if we provide self-service online scheduling access, jurors will take advantage of it and significantly improve attendance rates and save time and the costs related to getting prospective jurors to the courthouse.

So why not allow attorneys to have electronic access to the calendar and request scheduling of hearings via a web page or mobile app, subject to customary rules of getting agreement of the opposing party? Court staff spend a lot of time talking to attorneys on the phone setting hearing dates and getting routine orders signed setting hearings.

Taking it a step further, if we can do a better projection of time needed for a hearing based on the type of hearing and the issues involved, the CCMS will even check the other participating attorney's schedule in the court (and elsewhere if connected – see syndication below), and suggest alternative dates. Another possibility is to use an online services approach similar to Doodle.com with access to the attorney's shared schedules that also provide e-mail alerts and schedule prioritization voting and comment capability. In turn the system could rank the alternatives suggested, and when all have voted (or not, if the participant did not respond in time), the hearing date and time would be scheduled.

We understand that there will be skepticism about the possibilities of such a system because of “complexities.” But we believe that the combination of, internet connectivity, smart time projections, and the opportunity to rank alternatives, that a future system can deliver a solutionfor the majority of scheduling activities that produces at least as good a result, and with a lot less human effort.

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Syndication

In a 2011 CTB article, The Future is Not Paper – Part 4, the concept of court schedule syndication was presented. The concept in computer terms can be thought of as either an API (application programming interface) that “pushes” a query or as a notice RSS (real simple syndication) feed that populates a mailbox. In other words, the courts provide an Internet “service that can be consumed by programs. So by looking on your smartphone, you could see what the court has scheduled for that day and, even better, filter what you want to see. Information is power and this could provide detailed access to what and when events are scheduled to occur.

And would it not be great if, say, law enforcement officer schedules would syndicate (with appropriate security controls) with the courts, so that prosecutors could know officer’s schedules,

and officer time would not be wasted sitting in a courtroom? For an officer committed to testifying in several courtrooms within a short period of time, the officer's "feed" could advise subscribing prosecutors of the officer's current status, location and time of arrival.

Last, as the tragic events that occurred in Wilmington, Delaware on February 12, 2013,showed, scheduling can affect safety for the public and the court security staff. Fewer People in line at the courthouse can reduce risk by presenting a less attractive target. And again, effective scheduling by courts can save money on courthouse facilities (for example reductions in the size of courtrooms and waiting areas), the need for fewer parking spaces, and improve the lives of case participants by reducing wasted waiting time.

Part 10: Documents

Page 1

Courts produce documents…lots of documents. So Court Case Management Systems(CCMS) will help to produce and manage them.

From that time forward, as more computers were introduced into the courts, creation and editing of documents, particularly by judges and their staff, became an integral part of the fabric of the judicial system. Most commonly, “free form” document creation used by judges was viewed as separate from the CCMS functionality because the results were printed and not stored. And CCMS document creation functionality focused on standardized programmed letters/notice creation. Only later did the CCMS generate documents that were created in an editable format (most often RDF) that a clerk or judge could revise or annotate.

Pciture: ccms9

But now, full document functionality is a core component in CCMS. But please note that the document management system (DMS) is not a CCMS. We will explain.

In Part 6 of this series on Tasks, Events, and Workflow, we touched upon documents as part of the task-oriented interface. Almost all of the results of court tasks eventually involve the creation of a document. The issue is, therefore, how much can the CCMS do to help create the document, and how much user interaction is required to complete the document creation task? With this in mind, let’s divide CCMS documents into two general categories, static and editable. But before we get into the document types, let’s talk about document identification.

Document Identification

From the beginning of word processing systems, file naming conventions were implemented. This was hard to do with the original MS/PC-DOS 8.3 (http://en.wikipedia.org/wiki/8.3_filename) file name restriction. Later, a DMS that connected a CCMS database to the documents through integration provided a lot more flexibility. And CCMS, as a database itself, also can provide this document management service as part of its wider mission. However, documents themselves with E-filing and E-Notice/E-Service need to have identification contained within the document itself. This is where metadata can help or hurt. In 2004, the Court Technology Bulletin noted issues with word processing metadata in this article:

Therefore, metadata contained in editable or PDF documents can and should be controlled and “fed” by the CCMS. And in turn, when the document is downloaded and repurposed by the legal system, that metadata can be used to validate the document (when compared with the court’s source CCMS version) and potentially better categorize and used.

Static Documents

Static documents, most often some type of form notice, were the first to be automated in CCMS. In many instances the CCMS output data was simply a report that printed an entire notice type of document (one court for example had different colors of paper for each type of notice it sent, that in turn facilitated sorting/processing when returned). In Other instances, the system printed the data in the blank fields in pre-printed form documents. Now, this is still a useful approach. Self-seal forms/mailers are still incredibly useful for jury summonses, past-due/collection notices, and similar mass-mailings. And postal systems are very good at producing this kind of output these days as they continue to expand their portfolio of business services. This approach also reduces problems that courts in developing countries have affording printer toner, ink, and paper costs, as it is a centralized approach for their entire national court system. Editable documents are different from static documents in that they allow for text wrapping, pagination, and the ability to flexibly embed images, most often, a signature facsimile.

Until relatively recently, editable document formats were in proprietary formats. This Resulted in a considerable amount of work by CCMS programmers to be able to merge data into the documents. But that has changed; “Standards to the rescue!” Documents are now created in some manner of XML file format such as ODF, OOXML, or enhanced PDF. Thus it is possible to write the data directly into the appropriate section of the XML file without disturbing the formatting or other parts of the document.

We strongly recommend that courts consider adopting ODF and ISO standard PDF/2 for their CCMS document integration. This approach allows multiple non-proprietary tools to work with the documents and provides a measure of “future-proofing” the resulting systems as these standards are already in place, and are widely used by the major and open-source software producers.

Further, editable documents are literally the raison d’être for appellate courts where documents are authored, shared, and modified by multiple authors in and between judicial chambers. Therefore CCMS should be able to provide all manner of access/use security as well as organization, version control, and collaboration capabilities. And the CCMS should also provide document authentication and signature capabilities with encryption that set a new bar for document, and hence information, protection.

In our opinion, the disconnected, non-integrated manner in which some courts have implemented document management systems separate from the CCMS has been one of the causes of judicial discomfort with moving to an electronic environment. When one must go to multiple systems, or have no system to control electronic document
information, that discomfort is warranted.

Therefore, user access control (including the public), encryption, digital signature, an document validation should all be “built-in” CCMS functions. See:

http://courttechbulletin.blogspot.com/2011/05/trust-and-e-filing.html

http://courttechbulletin.blogspot.com/2013/06/handwritten-signatures-now-punch-line.html

Electronic Documents as the Database

Finally, with documents being produced by and in concert with the CCMS, as well as coming into the system via E-filing, we believe that courts need to change a common view that document files and the CCMS database will separate entities. It is not surprising that this occurred because court registry / docket books have been traditionally separate functions in the court organization from maintaining the court files that were used by the judges, chambers, and courtroom staff. Now that documents are in electronic format and, as we suggest, referenced and stored will be provided by the CCMS database, they too can be used as part of that database. Obviously searching both data fields in the database and text in documents should be part of a new CCMS system, thanks to new search technology and XML-enabled databases (accepting XML as input and rendering XML as output). But if the documents contain XML markup (we wrote about that possibility here in 2006), then those searches become much more precise and efficient. And, even better, the document could contain data that would not need to be replicated in relational database fields.(please see Note 1 below) Form-structured documents with XML tags are the obvious starting point for this combined approach. But we would also suggest that court technologists should keep an eye on the work being done in the legal research industry in developing taxonomies (please see Note 2 below) and full-text indexes that provide a rich content environment.

Part 11 - The Impact Of E-Filing

Page 1

We have discussed over the course of this series the concept that CCMS will do integration of the case indexing and processing function with that of case file and document management. In manual and early-generation automated court case management systems, it was enough to simply record the fact that a document was received. Later, document management systems were developed, they were often implemented as applications separate from the case management, as they were viewed as a separate court operation serving the courtroom and chambers. But we believe that we now have to accept the fact that we need all court information will be universally managed by the CCMS.

Picture : CCMS 10

E-filing is the manner in which courts will increasingly receive documents that will trigger CCMS management and workflow. Thus, there are two aspects of E-filing that are an important part of future CCMS applications. First, E-filing must facilitate the data entry/acceptance of the filing into the CCMS. And second, the E-filed documents must be “smart” in order to support CCMS case information and decision support requirements.

Let’s start with the E-filing system’s ability to self-docket/register. Since the beginning of E-filing, user interfaces have generally required them to identify the case number, filer, document type, and other information in order to be accepted by the clerk’s office. This “Question and Answer” approach was pioneered by the US Federal Courts starting in their original pilot in the Northern District of Ohio. And, after a short time, they made the decision to essentially turn over the docket/registry data entry to the E-filer. This is shocking to most state courts that would never imagine that attorneys would or could do the data entry correctly.

Another less common approach is to embed the required docketing/registry data within the document itself. This is one of several reasons for developing the Legal XML ECF and NIEM XML data dictionaries. Obviously, if the document contains the data that can be read by the CCMS for the docket/registry, there is no reason to require the filer or clerk tore-enter it. While thisapproach has been used successfully as far back as 1998, it was difficult to maintain this approachat that time as the word processing document file formats often changed. But with internationalstandard ODF-XML and PDF formats, that problem is nearly eliminated today.
Also, don't forget to identify the forms in the document properties and meta-data as we wrote about in CCMS Part 10: Documents and here and here. Form identification meta-data will be very helpful in validating where the document should be placed in the CCMS case categories and workflow. And, if there are problems, it will allow the system to direct the document to the proper court staff for review and remediation.

Now you may have already noted that in the past few paragraphs we have already delved into the "smart document" idea. E-filing documents must be submitted in a computer readable format so that they can be searched and used for document editing. But more important for the CCMS, the documents become an integral part of the system's data set. Modern databases can use the XML tagged data for document indexing, search and retrieval. If the E-filed documents are in XML format, or have embedded XML data extracted to supplement the document description, they can be used for all manner of query and reporting. This in turn helps to eliminate the need for programmers to continually add data fields to the CCMS to capture and count things for management and policy reasons. How many times have you been asked how many of X types of things did you receive in a particular period and were not able to respond other than to manually search the case file? With smart documents you can use the database query tools that can go beyond simple text search to find the answer.

The smart documents are also much more useful to support judicial decision-making. We Have written about seeing case file "sticky notes" that are used for quick access to specific sections of documents in the physical case file. We can do much, much more!

Smart documents can be easily organized electronically and reorganized as the case situation changes. They can be full-text searched and, even as was done in one early system, blocks of text can be identified and "called out" (see below) to focus the judges attention for decisions that need to be made. The "call-outs" can represent the key points ,law, or evidence in the case that in turn can be selected and the full document text then assembled, displayed and edited into a finished product. Now how automated this process can become will certainly depend upon the type of dispute and the resources(both automated and human) available. But it is possible and should be considered as part of new CCMS design.

"The OASIS LegalDocML TC works to advance worldwide best practices for the use ofXML within a Parliaments', Assembly's or Congress' document management processes, within courts' and tribunals' judgment management systems, and generally in legal documents including contracts."
For our visual learning friends, the "call-outs' ' we are suggesting something similar to the pictures in this blog post showing various graphics that have been prepared as part of trial evidence. Example number 3 is the view that may be the most useful in the judicial setting

.

Finally, please note that the document decision support ideas shared here may be many years in the future for a fully automated system. But in the past such a system that was developed in the early 90’s that while not particularly automated, provided a focused presentation approach for the judge that increased their productivity by saving hours of work each day.

Part 12: System Security

Page 1

We are finally back after a busy fall with another installment in our series on court case management systems. In this installment we discuss CCMS system security design considerations.
Individual Identification and Authorization

Picture CCMS 11

The User

Any security system begins with the user. Identification of a user and subsequent registration to provide credentials (username and password) are a normal part of system administration. However, assignment of security access may depend on the role that the person performs in court. Obviously a judge has a high level of access compared to, say, anew court clerk. So management of the person's access connects to two areas: their position title managed by human resources (HR) and their work assignments that are managed by court management (presiding judge/ elected or appointed clerk/ court administrator).

Automated CCMS will support both requirements. Some advanced courts have connected their automated CCMS with their human resource systems via LDAP2/LDAP3 protocols (see end note below) that provides an ongoing automatic verification that the person is still employed by the court and holds a particular position as defined in the personnel system. This automated connection is extremely handy for large organizations and relieves the system security administrator from one more worry, not being notified of a person ending court employment. Of course the HR system does not track what a person's work assignments are in the court and, hence, the information they need to access. This must be performed by their work supervisors and transmitted to the CCMS security administrator. The more efficiently this is communicated, the easier it is to have a secure system.

Roles

The definition of role in a CCMS is both court staff assignments as well as case participants. Therefore, in each case, people have roles and relationships to case types, documents, and data. And specifically work roles will vary based on the case, case type, court, the court organization, and the organization of case participants.

For example, within a court, a court work role might be to accept incoming cases (and all the work that entails), while others are scheduling hearings or presiding at hearings or trials. Thus in a small court one person will have multiple roles while in a large court one person will have one role. We see this in many places where a judicial "commissioner"may do nothing but criminal release hearings as their job, while in a small court the judge performs this among many other judicial

functions.

And roles change. A person may have their work role for a specific time period before it changes according to business and personnel needs. Thus, the CCMS should capture the start and end date for the person's role assignment in a history of work assignments.

Another common requirement for CCMS is to track judicial conflicts with case parties and/or attorneys. The role that a person has in a case, as well as the type of proceeding that the judge is assigned, may determine whether a judge should be disqualified or not.

And yet another example of the role is an attorney who was involved in a case early in his/her career, say, as a prosecutor, but now has become private counsel. They may not be able to access case information, for instance, in a juvenile matter that they prosecuted in the past, now that they are in a new role in relation to the court. This type of information is most effectively maintained in a table of conflicts that may change from time to time conflicts are discovered and resolved.

Groups

A related security access concept is groups. A group in a CCMS will be a court, the members of the judicial chamber, or a clerk/ registry office.

And for example in litigation, a case may have multiple plaintiffs/ petitioners and multiple defendants/ respondents (claimants). These parties, counter-claimants, cross-claimants, and third-party claimants may be involved only as to certain claims, so all parties involved in motions concerning certain claims need to be noticed for court events orbe sent court orders. As certain claims are amended, adjudicated or settled, systems need to track the status of those claims and which parties are involved.

These examples show what everyone in the legal system knows -- relationships and groups are dynamic and complex and therefore must be managed. In CCMS, group membership often sets the "floor" for access to data. Simply having a role of a judge or clerk/ registrar results in default access. And while this level is fine in most cases, because access can also be controlled by the computer's location in a building on a network, it provides only the most basic filter. And in our experience, access allowed by statutes and courts rules and changes of roles within organizations generally require more granular control.

Trust

The concept of trust was explored in this earlier CTB article on Trust and E-Filing that dealt with information access from outside the court organization and between trusted justice agencies.

Internally, trust is another matter. To quote President Reagan (apparently based on the Russian proverb he learned), the operative approach is "trust, but verify." Access to data is required to operate the court. But in order to identify, and constrain, abuse, robust logging must be built into the system. And since courts must account for money received for costs, fees, fines, bonds, and

other trust accounts, appropriate data logging along with standards-based procedures must be implemented.

Now if we have done a good job in identifying the person using the system, we can log what they did in the system. In the past this was often not feasible because of the amount of storage needed for the logs, but with computer disk capacity being literally pennies per gigabyte, that barrier has been eliminated.

Logs can also include network and machine information in addition to the user's account to identify when and where the data was entered. Many systems use the computer network card MAC address for this purpose.

The question then becomes who audits the logs? In some courts it is done as part of the financial and process audit review. But in others it is up to court management to perform this duty.

Therefore, it behooves the CCMS designers to provide a rules-based audit portal to facilitate auditing by the court manager or other role. And if a problem is suspected, the audit portal should facilitate a trained forensic data system auditor's further investigation of the full data set.

Part 13 - Public Access Capability and Interface Options

Page 1

Privacy and public access to court information has been a major subject of discussion since the advent of the Internet, as evidenced in our good friend and former colleague Susan M. Jennen's book *Privacy and public access to electronic court information: a guide to policy decisions for state courts* published in 1995. The NCSC has continued to monitor information on this subject area and has compiled it here.

But before we get started, please note that this article is not intended to discuss the reasons why or why not access to particular court data should be given to some person or group. But rather it is intended to discuss how access and access control can be technically accomplished.

Picture CCMS12

A Logical Structure to Data Access

The first part of this article focuses on data access by known case participants including judges and court staff. In this scenario we think that the CCMS will be designed to implement multiple design requirements for information access. When designing access one must ask questions. A few of these questions are:

- Who are your information users?
- What information do they want?
- When do they want it?
- How automated and in what format do they want the data?
- How sensitive is your court's data and documents?

The entire Court Technology Bulletin CCMS series will be attempted to build a logical structure that deals with these and other questions. For example, in Part 3 of the CCMS Series we discussed the mapping of the court's organizational structure, the users, and their roles in the court. And in Part 4 we discussed the concepts of Relationships and Groups.

If you can answer the question "who", and have captured that metadata as part of the normal systems operation, you have the ability to create a system with specific access and usage rules for users and groups. And we believe that this design will at least mirror and could very likely result in a better implementation of the statutory and court rule restrictions related to data access.

For example, litigants and their attorneys can be automatically authorized to access all of their documents and information. The system can either provide a case related access pass word or

credential for that specific set of data because it knows who is related(grouped) with the case as a participant. And this includes judges, as we recently learned that civil law systems include that as one of their case information access restrictions.

Extending user identification and thus authorization to access and view information is the big challenge that we have discussed here and here before. It can be done. It will take planning and work to achieve. And no, it will not be perfect. No systems, especially including our traditional paper-based systems, are.

The Public Facing Database

First of all, in today's world of almost-free digital storage, and for data security reasons, it makes no sense to expose the court's production case management database on the Internet. Therefore, copies of the production system can be used. And since all of the major commercial databases allow data to be written to two or more instances, this also enables automatic fail-over /redundancy. But does it make sense for the public version to be the exact copy of the production system? It is now possible to design the systems so that only selected data is automatically copied to the public system. Or the public system could literally be populated using a different technology such as XML that would likely be more useful to data users who don't need event/task production capabilities.

The Commercial Information Industry

In the USA, a huge business has been built around commercial databases of public information. For more than thirty years that we have been working in the courts and visiting courthouses, the commercial data capture business has been something to design for. Courts have had to provide working space, public terminals, and even communications to support. And for more than thirty years we have heard of myriad of problems with the accuracy of the resulting data in the commercial systems.

This is where the political issue of whether or not commercial data firms should be able to use court data at all is often raised. Many courts have adopted a policy often referred to as "practical obscurity" by requiring that data collectors physically come to the courthouse and retype the court information for their purposes.

However even back in the 1990s there was a brief effort to develop a data sharing standard for courts and commercial databases using Electronic Data Interchange (EDI)Technology. EDI was the technical approach used before XML was developed. Two Standards, X12- 175 Court and Law Enforcement Notice and X12-176, Court Submission TYPE were created using the EDI standards. The standards were never widely used but the 176 standard addressed the data to report a "claim disposition or an opinion deciding a case." (see end-notes below)

This approach fixed one of the key problems identified with the practical obscurity approach, the fact that cases often have multiple dispositions such as modifications of judgments/ sentences and, later, sealing, expungement, remanded appeals or pardon. Practical obscurity very often resulted in the data not being captured by commercial providers. This resulted in inaccurate

and/or conflicting data about a person that can affect whether or not they can get employment, credit, or housing. Electronic data sharing has become enabled in courts because of technological advances and pervasiveness of document management systems and E-filing, but their purpose is not primarily public data access. Be aware that the ideal technical approach for public access by sophisticated automated systems is for the court to provide a web service or API interface into the CCMS database as discussed above.

Picture CCMS 13

Identifying the Information Users

Some courts identify data users. This is certainly the case for the US Federal Courts Public Access to Court Electronic Records (PACER) system. But as we were writing this article, one of the technical committees of the OASIS-Open organization provides some interesting information with the release of the "Identity in the Cloud Use Cases Version 1.0" document (pdf). This document provides a context for development of identity products and services in the future. It is something we will need to monitor as it (hopefully) progresses.

Controlling Data Once it has "Left the System"

Courts are also concerned with data accuracy since errors can revisit as additional cases, procedures, or as bureaucratic headaches. Back in 2005, one of your authors published an article in the NCSC's annual Future Trends in State Courts series called, "Digital Rights Management (DRM) Technology Will Change the Way Courts Work." The article explained the basic concepts of how DRM technology works. Of course, since that time many of you have purchased digital music, books, and video from online services that use DRM technology. But courts have not made an investment in it because of the cost and lack of direct financial benefit to create these systems. DRM solves a lot of information issues, however, so if you are interested we have posted a longer more detailed version of the article online.

Part 14 – Case Related Requirements

Page 1

Accounting Principles

The court clerk's financial system, as you may have already guessed, should follow basic accounting principles as defined by the American Institute of Certified Public Accountants(AICPA), Governmental Accounting Standards Board (GASB), and Generally Accepted Accounting Procedures (GAAP) for USA courts.

While we are sure that the documents produced by the standards bodies are fun reading for some people, we suggest a lighter approach to the subject as provided by the Arizona Supreme Court Administrative Office of the Courts in their Minimum Accounting Standards and the accompanying Compliance Checklist document. This 34 page checklist document is particularly useful, as it asks the questions that every court should ask about how they perform their accounting duties.

Correcting Entries

In general, data should never be erased or corrected via the database for any financial or penalty accounting. Instead a correcting entry should be created where the original record that is in error should be marked as invalid and that action will be stored in the CCMS log or event table for the case where it was originally stored with a reference to the correct case number. Then the correct record should be created in the correct case. In other words, no action is taken without a log record being recorded. This allows the presiding judge, court administrator, and/or financial auditor to run a periodic (monthly) error report showing what errors had been made, in which cases they occurred, for particular court parties, and by which court clerk staff to identify problems in procedure, training, or deliberate action. Similarly, transferring funds from one case to another should also be written in the case event and system logs to monitor activity.

Escrow and Suspense Accounts

In the USA many courts have the responsibility to create and monitor escrow and suspense accounts. The Franklin County, Ohio, Municipal Court Clerk's web page explains how their "Rent Escrow" system works, as an example:

“The Rent Escrow Program permits a tenant with complaints regarding housing conditions to deposit rent due into an escrow account until the dispute between the landlord and tenant is resolved. Rent Escrow hearings are scheduled on Monday at 10:00 a.m. in Courtroom11B. The hearing date is determined by the date of filing. Most rent escrow disputes are automatically referred to the Dispute Resolution Program.”

More generally, the court clerk may hold funds for primarily civil case matters where the parties agree to deposit funds with the court until a judgment or settlement can be reached.
Suspense accounts track receipts and disbursement of an uncertain nature until they are identified and posted in appropriate ledgers and journals.

Trust and Guardianship Accounts

In order to safeguard and oversee the administration of trust and guardianship accounts, many courts have programs for fiduciary reporting. The Wisconsin Court System explains their web page:

“The OLR Trust Account Program has two primary goals: 1) to identify problems in the management of client trust accounts and other fiduciary accounts, and potentially, to prevent conversions from such accounts; and 2) to educate lawyers with respect to safeguarding funds and maintaining the required records.”

Since courts are mainly providing a monitoring service, this is where case task tracking can be helpful in making sure that the reports are filed on time by the designated fiduciary. And in turn, if the reports are not, then the proper action can be triggered for administrative notification or judicial action.

A guardianship can also be appointed by the court as described in Cuyahoga County, Ohio Probate Court:

“A guardian may be appointed for either an incompetent or minor, which are defined bystatute as:
Incompetent: Any person who is mentally impaired as a result of a mental or physical illness or disability, or mental retardation, or as a result of chronic substance abuse, that heist incapable of taking proper care of himself or his property or fails to provide for his family or other persons for whom he is charged by law to provide, or any person confined to apneal institution within this state.
Minor: Any person under 18 years of age who has neither father nor mother or whose parents are unsuitable to have custody and tuition of such minor, or whose interests, in the opinion of the Court, will be promoted.
Minor Settlement: Natural parents do not have an inherent right to settle personal injury claims on behalf of a minor child. The Probate Court must authorize approval of such

settlements. If the settlement exceeds $25,000, the Court will require the appointment of guardian

of an estate."

And Cuyahoga County Probate Court in turn provides the following supervisory services that must be tracked in the CCMS:

"The Probate Court is the superior guardian, and all guardians must obey all orders of the Court. The Court exerts its supervisory authority through the following:

Accountings: A guardian of the estate must file a written account with the Court biennially (annually in V.A. cases) as to the income and expenses of the ward's estate. Reports: A guardian of an incompetent ward must file a written report annually or biennially. The report identifies the status of, and need for the guardianship. Citations: If a guardian fails to timely file a report, inventory, or accounting, the Court May cite a guardian to appear, and may fine, reduce the guardian's fee, or remove, the guardian.
Investigations: To determine if a guardianship is functioning properly, the Court may order an investigation by a Court Investigator, Law Enforcement Agency, Adult Protective Service, or other County Agency. Prior Approval: The guardian must first obtain approval of the Probate Court before entering into contracts or leases, making improvements to real estate or mortgage real estate, selling assets, settling any personal injury claim for the ward or spending the ward's funds. Removal: The Court may, at any time, in the best interest of the ward, remove the guardian."

Again, this is primarily a case task and event process that may or may not involve financial accounts maintained and supervised directly by the court.

Child Support and Pass-Through Accounts Such as Victim Restitution

Depending on the jurisdiction, some courts provide pass-through accounting for child support payments and victim restitution. In these instances, special accounts and tracking systems for periodic or full payments tied to case decisions must be implemented. This Becomes more complex when the amounts and time periods change, or if there are multiple obligors or obliges (variations of the dreaded joint-and-several liability scenario). Therefore any changes in the expected amount and schedule will be documented in the CCMS, preferably by including the judge's actual order as part of the record.

Other Non-Financial "Payment" Monitoring

Finally, as noted at the beginning of this article, courts should recognize that all obligations ordered by the judge must be accounted for even when they do not involve money. This is because a person's obligation as defined in the court sentence is not satisfied, even when the financial penalty is paid, until the time in jail is served, for example, or the work service hours are completed.

A great number of courts keep these "non-financial" penalty records in separate systems that are often not linked to the original case or case disposition record. In the past it was particularly difficult to do this because of complexity issues or, because courts did not want to allow access by the agencies running the jail or work service programs, into their system. Of course with modern database design and tools, access can be segmented either via smart forms/documents, or

dedicated subsystems that can be used both to create the transactions to update the primary case record. This is where the NIEM data sharing concepts can be applied as one possible approach/solution.

But ideally this should be part of the CCMS and fed from the agencies performing those services. The point of this is that the case record serving as the single point hub for the case and penalties provides a better approach for monitoring the effectiveness of this area of the justice system.

Part 15: Financials –Public Requirements

Page 1

First just for fun, a link to the YouTube version of Money by Pink Floyd.

The USA courts in the 1980's as a way to fund targeted programs such as court automation. For example a fine is, say, $100 USD. In addition to that fine a surcharge of 20%, or perhaps a flat amount of, say, $5 were charged. Then, depending on the type of case or the offense that the person was convicted of, the surcharge may or may not apply. And one additional factor that had to be included in the design was the date that the surcharge was implemented, terminated, and/or the amount of the surcharge as the legislature changed it. You can see that this can become very complicated, very quickly.

As a result the public becomes very confused. It is very similar to our recent experience with either hotel or rental car charges. One might think they are renting their hotel room for$100 per night but with added taxes and fees it is actually $125 per night, with the bill listing the breakdown of these charges when we checkout. Let's just say that the total amount is not clear up front, that in turn results in a perception of fairness issue.

Thus, the CCMS will provide some kind of fee/fine calculator capability for judges and court staff as well as the public so that the full bill is readily available at time of sentencing.

Receipts

CCMS will have the function to generate financial receipts are critical for supporting court fairness and anti-corruption efforts (more on this below). Any organization that handles cash or financial transactions is susceptible to theft. And every year there are scores of court employees who are found to have taken money (embezzlement) from court receipts. A Google News search during the writing of this article found such cases in Mississippi, Iowa, Michigan, Wisconsin, and Virginia in recent months.

In many instances it is receipt of cash payments that presents both the temptation and opportunity as government salaried clerks/registrars are often one of the lowest paying positions in the courts.

Under and Over Payments

Just a note on this issue. Courts often receive an incorrect payment amount, whether by check (bank drafts), money order, or credit/debit card. So the CCMS should be able to record these payments and take the appropriate action either as an account credit or refund check. In no circumstance should these payments be rejected (sent back) or held until the correct amount is received. In turn, the status of the case might be changed to reflect the partial payment. If

however the party paid by check and the person cannot be contacted for refund (for example, the refund check is returned), then those funds should be held in trust by the court or their associated government financial office for a period of time. During this time period the check will become “stale” when it is outstanding for a period of six months or more. A bank is not obligated to pay a stale check. Law requires government entities to turn the money over to a state-level revenue department which will then post names of persons due refunds for taxes and fees. This is a common approach in the US and alleviates the need for the court to make more than an initial effort to return overpayments.

Checks and Credit Cards

In the past courts have often restricted payments to cash or money order or, when permitted, by check (bank drafts). We have always found that the acceptance of checks becomes problematical because of the possibility that there were insufficient funds in the bank account for payment to the court. This in turn results in failure to pay and similar warrants and collections processes that add to the court’s workload. Non-sufficient funds(NSF) underpayments and non-payment become a collection issue.

Then In the 1980’s some enterprising courts realized that if they made it easier for people to pay their obligations with credit cards, both the percentage of obligations paid and overall revenue increased.

But the objection that many governments offer is that they were required by the credit card companies to absorb the payment fee percentage, unless state law allowed the court to pass on the service charge. However, that now has changed. As noted in a December,2013 CTB post:

“In an antitrust class action settlement announced on December 13, 2014, an article by Reuters News Service notes:

“Under certain circumstances, the settlement allows merchants to charge customers extra if they use Visa or MasterCard credit cards. But critics of the deal point out that those opportunities are extremely limited, and certain states prohibit such surcharging.”

"Many courts have either decided not to provide credit card payment or used a third party service because of the need to charge and collect the percentage based fees. It may be possible now to charge the fee and bring the card processing in-house.”

arge the fee and bring the card processing in-house.”

So what does this have to do with receipts? For court financial accountability credit/debit cards have the advantage of providing a second parallel system of receipt recording. Thus If a clerk receives payment they will record it will be first in the CCMS and second as a credit card transaction. And if the credit card transaction is integrated within the CCMS, the system will perform both processes.

With cash, only the CCMS should have that record if the clerk entered it at all. And that brings us to a discussion of cash registers and cash drawers.

PCI

The CCMS will directly accepts credit/debit card transactions, it will need to be compliant with the PCI Security Council standards for computer hardware and software in order to interface with the credit/debit card clearinghouse services. The PCI standards are designed to keep the cardholder's payment data secure. And as stated in the "Why Comply with PCI Security Standards" web page:

"As data compromise becomes ever more sophisticated, it becomes ever more difficult for an individual merchant to stay ahead of the threats." "The PCI Security Standards Councils constantly working to monitor threats and improve the industry's means of dealing with them, through enhancements to PCI Security Standards and by the training of security professionals."

Cash

Government policy makers are often mistakenly under the impression that cash payments result in all manner of benefits. Specifically the benefits are (footnote link here), immediate payment, simplicity requiring less bookkeeping, limited risk of fraud, and most of all, no fees. So let's discuss these "benefits." First, payment in cash may be slower than electronic form because it must be physically deposited and verified by a bank or, in many cases, in a government financial office and then in a bank (a two-step process). This can take days. Second, simplicity is true as long as the person handling the cash performs it correctly. Itis easy to misidentify bills, particularly US Dollars as they are all the same size and generally the same color. Third, it could result in less bookkeeping if the amounts are small. But maintaining cash registers and/or cash drawers is a time consuming operation also requiring reconciliation of the cash register paper tape (another thing to store). And Fourth, the claim that it limits the risk of fraud is almost laughable with the embezzlement issues noted above along with counterfeit currency.

But courts will always need to be able to accept cash payments. Therefore, both training and countermeasures for handling cash should be employed. One good reference is Security with photos showing how their video surveillance system works. And another news document video shows how cashier theft works. And a final video shows how dishonest cashiers track how much they are stealing!

Deposits

Next, whether or not your court uses a cash register with a printed tape or a cash drawer, each transaction will need to be recorded. These transactions will in turn be used to create cash and check/money order deposit reports for either the government financial office or the bank. And these deposit reports may very likely be required to track multiple accounts for the accounts to receive the deposits.

Internet Payments

Finally, as more and more courts are accepting payment via the web, these systems meeting PCI compliance will need to interface with the CCMS so that compliance with the court's orders and the overall tracking of financial related events can be recorded in the system.

Part 16 – Reports And Statistics

Page 1

The Goals

First, in starting this article we want to define the difference and the reason/goals between reports and statistics. For purposes of discussion in this article let's generally create two categories:

Reports = Management or operational performance -- The output of CCMS will be used to actively manage day-to-day decisions about court organization and operations, using financial and non-financial performance measures. An upcoming court schedule and a list of NSF checks are two such court operations reports. ***Statistics = Policy-oriented*** -- CCMS output will be the most often a time-oriented"snapshot" count of cases, numbers of cases in a particular status, and the like. Statistics may feed further analysis such as the cost-benefit of implementing a policy like a problem-solving court or a one-day-or-one-trial program. Statistics are often contained in monthly or quarterly reports that courts submit to a higher authority. But statistics also involve case status and demographics to categorize and make sense of information. And both case status and demographics are dynamic definitions and criteria change based upon the questions asked by researchers and/or policy makers.

We believe that often the goals of statistics and reports are mixed and result in confusion for both policy makers and judges/court managers. There is a continuum of kinds and uses of numerical information about courts, with management/ operations reports on one end, and statistical policy-oriented reports on the other end. On this continuum neighboring examples are not greatly different from each other, but the extremes are quite distinct. Put another way, operational data such as trial date certainty has mixed uses and can be used to allocate daily courtroom resources and also to drive policy decisions. We want to make some clear distinctions as to the purposes of using data and thus the data will be required from the CCMS.

Courts Count Events

If one gets to the essence of traditional court statistics one will find that they are based on case events (and tasks) as we described in Part 6 of this series. Let us explain. A filing of case is an event recorded on the date it occurred. In the same way, hearings, case conclusions, and case reopening are also case-level events will be recorded in the CCMS. Now if you think about that, courts record many other events. But we rarely count them as part of our statistical reports.

We know that this work will be recorded in CCMS as well as in paper registries in the past. This kind of event within a case consumes staff time, and in this instance also paper, envelope, and postage resources. So it should be counted and reported as part of the court's overall workload report. But beyond that, not all events are equal, so events that consume judge or staff time should be "weighted"so that the time and resources can be credited to the court for the work that

was done. Therefore both the “raw count” and “weighted count” can be included in a court's statistical report.

Because in order to support the court’s budget with policy makers, courts need to be able to accurately reflect all of the real work that is performed. Case counts are just one overall summary of work that in the past was relatively easier to report. But case counts only tell part of the story. With a modern automated CCMS, counting everything in the system, including events of all kinds, is just as easy as counting only some things.

Everything in a CCMS will be Data and Can be Counted

The other precept for this way of thinking about court reports and statistics is that any data field will be captured in a CCMS, including the text and image contents of documents, can be searched and quantified. In Part 10 we discussed searching both data fields in the database and text in documents as part of a new CCMS system, thanks to new search technology and XML-enabled databases (accepting XML as input and rendering XML as output). And since we are focusing on the future, let’s assume that all of the court's documents will be in some form of electronic format. Please note that this leverage another legal technology trend, turning it into factors for planning here. First, this applies primarily to pleadings, motions and proposed orders, but also to exhibits in electronic format. Second, e-discovery is driving Optical Character Recognition capabilities even with handwritten documents.

Therefore, if everything is potentially statistical data, we need to start to think about what data in the CCMS needs to be in which form? This is important because in the past, courts had to add data fields to the relational database in order to capture data, often policy-related data to count things. Unfortunately, this approach was only as successful as the courts were able to add data fields, change data entry screens and add reports. Without a legislative mandate with funding to support this process, it has been difficult for courts to capture new data for analysis because this had to compete for attention with other projects, and courts do not often receive any direct benefit (or funding for staff and time) for this additional work. Thus it is a low priority.

For policy makers much of this need is related to research for improving cash flow of criminal and social services cases. But since this data can change over the life of the case -- think of a child being tracked for a decade or more -- a CCMS which is not highly configurable is not designed to accommodate initiation and evolution of this kind of data capture. But, if we can count things inside court forms and documents that are updated naturally in the CCMS case document file by the litigants and case participants, then we believe that both operational and policy data needs can be addressed and, in most instances, fewer specializedstatistical data fields will be needed.

Again, as pointed out in Part 10 in this series, CCMS will provide event registered in the database are often the documents / forms submitted to or created by the courts. And those documents are identified by the event codes and/or the form identifier itself. So adding a data field to required form provides and exposes the data to use and analysis. Obviously events and therefore the data field values in documents can be counted as well as timelines/
differentials as part of statistical analysis.

Case Status

Another important concept that deserves discussion is that of case status. We all know that case status can change throughout the life of a matter brought before a court. Is it in a status of case preparation, active, inactive, or closed?
Whether the case status is active and therefore the case is under management of the court, is a key operational and statistical differentiator. In other words, is the court in control of it and can move forward with the case or not?

Case status in the CCMS should be recorded and changed either via the case documents received or created by the court. For example, in some instances cases are not pursued by the litigants. After some defined time a reminder task should be sent to the case manager who in turn can make the appropriate inquiries. If the case is still legally active, but say the person has left the jurisdiction, that fact should be noted in the case file in a
document, the status changed to inactive, and case aging suspended. One can see that this would move the case from pending active and pending inactive. At some point if the case does not receive any additional action, then the matter should be statistically closed in the CCMS while legally remaining open. In other words, this event process provides management information so that the courts can realistically allocate their resources. And This approach can also address the perceived need to count all “legally active” case matters filed in the court. But these counts should be reported separately so that they might be addressed in future policy changes, such as to timelines and grounds for dismissal.
A quick example. In one country the electric utility and hence the court was not able to pursue action on theft of electricity simply because the electrical meters and utility poles did not have any kind of identification number. So the cases sat in the court as pending matters year after year. Once it was determined that the cases could not be pursued by the plaintiff electric utility, they were able to withdraw them from the court. Having a large number of cases as pending inactive would have alerted the courts and policymakers much earlier to this problem and remediation action taken. In this instance the electric utility painted identification numbers on the utility poles and meters so that they could file cases that the court could actually adjudicate in the future.

Status Creates Context

The status of the case also creates the context in which case management and statistical reports are viewed. Work done on inactive cases such as reissuing a summons may not seem important as it may not result in any positive action toward closing the case. But itis important that this work be performed and counted. Availability of status data can incentivize the court to responsibly and proactively attempt to adjudicate the matters that have been brought before it. Conversely if the inactive case count status continues to grow, there is often a legal or procedural issue that should be dealt with by legislation or court rule.

Context is particularly important for judges as they are, fairly or not, evaluated on their case disposition counts. Again, if the cases cannot be pursued, such as when defendants have absconded, thus moving the case to an inactive status, then the judge should not be viewed as

being unproductive. Another example is in countries where cases are sent by judges to “experts” for review and input. The time period status for that expert work must be captured and closely monitored to identify delay and potential corruption activity.

Participant Demographics

Participant demographics is statistical information that is needed or perceived to be needed by policy makers, and also provides context for policy and operational decisions. Today, this data can be obtained via electronic forms submitted by the litigants or from social service government agencies and law enforcement. As a policy for privacy protection, many courts are starting to confine demographic data to one form that is then assigned a higher security access level. This form can also be encrypted to reduce identity theft issues. But there is a second level to this discussion for policy and analysis purposes that was also envisioned by the US Department of Justice, Office of Justice Programs Privacy Technology Focus Group in 2005 (see Working Team Two’s section in this PDF document). The personal and demographic data from the forms can potentially be “anonymized” and placed into a separate database. Researchers would then be provided with ability to work with the anonymized database thus allowing policy research to proceed while reducing risks to an individual’s privacy rights.

While many of you might not think that this will be part of the CCMS, it is important to begin thinking about this in order to support your policy reporting needs.

Process-Oriented CCMS Data

It will be possible for the CCMS to help to identify and count Ms. Cornell’s “touch points.” For Example, it is common that queries of the CCMS either via a court website or public terminal can be counted. The number of queries and financial transactions handled by the front counter staff can also be counted since they would log into the CCMS with the “Front Counter” role designation. And telephone calls into the court can be connected (IP- Telephone) with queries to the CCMS. Time per transaction can also be captured as an additional metric. But time is not as important as service delivery in measuring success, and therefore courts might consider adding the ability to ask the caller or website visitor whether they received the information they needed. And if not, what was the problem so that the system can be improved in the future?

Picture CCMS 14

Management Reports

The focus of court management reports should be to quantify the court's workload and workflow. Task reports by individual and group role are particularly useful for previewing upcoming work and potential issues that can arise from uneven assignment. Uneven workload can naturally happen (a judge "wins the lottery of hard cases") or can be the result of policy or personnel capabilities (and many other factors). The point is to have a system that continually provides the monitoring information needed for management action, both tactically and strategically.

Management reports also examine trends which, on the operations/ policy continuum, are closer to statistics for policy purposes, though trends also have operational implications. Is there a seasonal change in the number or kinds of case matters? Did law enforcement change a policy or resource focus? For example, Ms. Janet Cornell tells other city deciding to implement traffic speed cameras. This had a huge impact on their caseload that she was able to show the "before and after" statistics. The city later
rescinded the program because of public response, and the court had statistics to show the effects of the policy change.

Some other judicial friends of ours have used their CCMS to examine sentencing practices. If the goal is fair and equal justice, this is a very legitimate use of trend data.

Statistical Reports

Statistics are counts that are greatly influenced by timeframes and case status. Depending On the date that the statistical report counts are computed using a court database may result in different numbers from day to day. This is because a case may be reinstated between day one and day two. Thus it has moved from a status of closed to a status of active. And if active, it is part of the pending caseload count. So when thinking about how the CCMS should work with statistics one must keep these "dynamics" in mind.

As Ms. Cornell quotes "What you count, counts" (that we first heard from Dean Ernest C.Friesen at the 1988 Court Technology Conference). The CCMS will provide the ability to count everything in the database. And it should be able to do those counts with knowledge of their status and demographic context.

Part 17: Dashboards

Page 1

“Data-driven decisions” is a phrase one hears almost daily. And why is this a major theme for our times, you might ask? Because it simply works. Examples are abundant in sports such as in auto racing, where millions of data bits are captured per second resulting in higher performance and much greater reliability, while pushing equipment to the edge of its capabilities (the same can be said for our daily passenger vehicles as well). In another example, Matt Kleiman, our colleague here at the NCSC, explained to us how data feedback allows him to train smarter for his favorite sport, road cycling. And we would guess that many of you have read the book “Moneyball” by Michael Lewis.

It explained how metrics transformed a downtrodden baseball team into a winner despite going against all “common sense.”
So the point of this article is to question “common sense” or “collective wisdom” in our courts and to look for new ways to use, and in particular, display the CCMS data that most systems have (or should have) to better manage their operations.

Picture : CCMS 15

Section I: Administrative Dashboards

The most common case management system dashboards that have been implemented often mirror standard court statistical reports. These reports can benefit court managers whether they are presiding/ chief judges or court administrators. And while they mirror traditional case management count reports, they have the advantage of being dynamic and therefore should be able to produce up-to-date case counts or snapshots monthly, weekly, or daily. Remember that an earlier article in this series discussed the fact that

Traditional case county court statistics only reflect the statistics at the moment they are captured. And as we all know cases are continually added, closed, reopened, etc. This is why trends are important because they show what is really happening in the overall flow of cases over time.

Administrative dashboards should also include the NCSC’s Court Tools measures, such as this example from the New Dawn Just Ware CCMS. Court Tools include useful performance measures such as clearance rates, age of active pending caseload, trial date certainty, collection of monetary penalties, and cost per case measures. (One measure that we hope will not be needed in most courts in the near future is “reliability and integrity of case files,” as discrepancies will be eliminated with electronic document management capabilities in the CCMS, and as E-filing will replace the majority of data entry/scanning labor for court staff.)

In Part 16 of our CCMS series, we also discussed in more detail other measures that could

potentially be built into the administrative dashboard. But most important is the ability for the dashboard to display warnings, just as your automobile dashboard does when door is ajar or the oil pressure is low.

This is a real problem as this article from CNN reports that a New Mexico community “lost” an inmate in their system for 22 months resulting in a $15.5 million settlement. Where was the check and balance that the court should have provided over the Sheriff’s Department? And while this failure was shared between the courts and criminal justice agencies, it isn’t the only monitoring failure that costs persons, businesses and
organizations time and money.

Therefore, dashboards warnings should be displayed when an anticipated work/ task activity does not occur; or when the work tasks are not completed on time by unit or individual; or when a case is about to exceed the CCMS tickler setting.

Another heat map example shown below is interesting because it could reflect the size of the count by the length of the column bar. And clicking on one color on the bar could display additional detailed count information.

Lastly, this blog page shows several stock market heat maps that were updated in "real time" during the US stock trading day. And, as was suggested in the chart above, if one clicks on one of the stocks displayed, one can see the current price, statistics, and trends. Some of the ideas presented here might also provide some inspiration for future CCMS design requirements and/or development.

In this example the size of the boxes could correspond to the case count and the colors to the overall “health” of that caseload segment compared to the standard set by the court. It can be used to show cases that are consuming significant time and resources (number of filings, hearings, trial days). The chart could be used to monitor probation

caseload or domestic relations matters under court supervision. And this chart could be used to compile data for an individual judge, probation officer, social worker, or teams of individuals.

Section II: Judicial / Case Management Dashboards

Before we get started on this section, we must recognize the work of our now-retired NCSC colleague Mr. David Steel man, and other pioneers such as Harvey and Maureen Solomon, on the entire subject of case flow management. This discipline has been a cornerstone of modern court administration. And as Mr. Steel man writes:

“We study case management because case management is the way we get rid of waiting time, [by] which we control delay, [and by] which we enhance the purposes of courts.
Case management is what we’re about in controlling delay.” (footnote 33 in CaseflowManagement, The Heart of Court Management in the New Millennium)

(Note: The NCSC Resource Guide on the subject can be found at: http://www.ncsc.org/Topics/Court-Management/Caseflow-Management/Resource-Guide.aspx)

Regarding case flow management, a dashboard can be used for tracking a particular case against the following measures:

Case processing time standards for that case type or case track Performance measures of cases of the same type or case track – case clearance rate, case processing time, case backlog (snapshot), trial date certainty Norms of continuances for that case type or case track.

Combining these into a dashboard is both possible and desirable. However, to this point we have not seen a graphical approach that really reflects case flow. So that brings us to our "big idea" that adapts case processing time standards and applies them to the concept of the Gantt chart from project management and, in turn, applies it to a future case management dashboard.

As shown below, we made the simple Gantt chart that identifies the different time standard "tasks" along with the time allocated to them beginning from case initiation:

Click on the graphic above to enlarge

So in this example, a civil matter (line ID 2) would start at filing. The filing date is shown graphically as a diamond or "milestone". The next bar (line ID 3) shows that this court normally schedules 5 days to serve the defendant, and allocates the next 30 days to prepare the defendant's answer, and so forth. The arrows between the bars denote a dependency on the prior task being accomplished before the next task is undertaken.

The next example below shows how a task can be added to the chart (ID 7 – Discovery Extension) and the dependencies in turn adjust the later tasks.

Click on the graphic above to enlarge Finally, shown below is an example of how the Gantt chart could display a delay in the case flow as designated by the red "squiggly" bar.

Click on the graphic above to enlarge Please also note that project management software has the ability to create levels of tasks so they can be displayed as expanded or contracted by the user or potentially by system rule depending on the phase or status of a case. The Gantt chart can also graphically display when a case would normally be scheduled for Case Management Conference and Trial. While this is interesting for a single case in tracking progress according to standard, it is not as useful as it can be when we group and compile the graphical information of multiple cases -- and thus we move on to the next concept.

Section III: Case flow Portfolio Display

Next, while the above Gantt chart concept is good for an individual case, it isn't adequate for, say,

a judge's entire caseload. In project management a group of projects is called a portfolio. And portfolio management has its own set of goals such as prioritization, managing contingencies, and maintaining response flexibility. Sounds a lot like case flow

management, doesn't it? So for the case flow portfolio graphical display we can look at a couple of possibilities.

1. Calendar case flow portfolio display. As shown in the graphic below, this month is all" green." But one can imagine a future month when many cases, because of delays or other reasons, have turned dates red as a warning. And of course one could click on the date to see the reasons for the warning.
2. Judicial Warning Grid. In this scenario the cases for a judge would be grouped by case type and status as shown below (please note that the status types and numbers are an example and not a reflection of a real system).

3. Overall Court Caseload Portfolio Management. A graphic that shows the now discontinued Microsoft Portfolio Management system display. We believe that there are ideas here that could be adapted for an overall court caseload dashboard building upon the graphical reports shown above.

http://www.microsoft.com/poland/project2007/project-portfolio-server.aspx
But for courts, portfolio management can also potentially provide data to support process and policy changes. And since the portfolio has the possibility of being compared between judges and courts, it could more easily highlight issues that might be addressed.

Section IV: Conclusion

We believe that these graphical displays, combined with active case weighting and the proper application of case flow management concepts, will allow courts to set goals, monitor performance, and enforce accountability in real time via the CCMS in a much more accurate manner. This is particularly true when comparing this type of approach with judicial quotas and other raw counts that do not reflect case status, case complexity, or the myriad of reasons that case adjudication and resolutions are delayed. In summary, courts can be managed better with better information design.

Part 18: Decision Support

Page 1

In the previous post in our series we discussed Court Case Management Systems (CCMS) Dashboards that support case process, management information, and decisions. In Other words, information that makes our “court process factory” more efficient. And the key purpose of case management is to organize data (and insure completeness) so that it can in turn be converted into information for cases to be adjudicated and decisions rendered.

It is exciting to report that there have been a lot of projects initiated in judicial decision support in recent years. But the creation and testing of these systems, as you will read, have been most often done in tests that aren’t connected to the core court case management information systems. This is not surprising since new ideas must be piloted and tested to determine their feasibility and effectiveness. We believe that it is now time to change this approach so that full efficiency can be realized.

But first before we delve into the judicial decision support projects and ideas, we must try to answer the question: Why does decision support need to be integrated into the CCMS? We think that some answers are:

1. We believe that the **CCMS will serve as the portal** for court processes and

case information. Fragmentation of systems and services very often results in uneven adoption and confusion for users as they may not know if and when decision support information is available. In other words, including decision support in case management is, as it is often noted in retail sales, creates a “one stop shopping” experience.

2. **Access control and security of information**, especially documents, is best

serviced by the CCMS. This is because ideally all of the parties, judges, court staff and associated entities involved in the case are registered with it. And as discussed before (see link below), the current status of those entities with the case should also maintained in the CCMS determining what, when and to whom this information is available.

3. **Documents are the courts’ “big data.”** - Now this is where things get

interesting and perhaps concerning. As anyone who has been on the Internet since1998 understands, documents can be computer-indexed and searched. The added beauty of court CCMS information will be in that the documents in most cases are associated with descriptive data of the item. With E-filing, they are increasingly becoming submitted in machine readable formats such as PDF. Therefore the CCMS data plus will be associated documents can serve as the bulk data repository for current and historical analysis and research by the analytical engines.

Database tools will be used by CCMS which can also be programmed for anonymization of research queries that can in turn address privacy concerns. New database systems can also perform many other queries and analysis for trends, inference, and validation studies.

One must understand that these capabilities are coming to the legal profession and public whether one likes this idea or not. A current and prescient example is the use of US Federal Court PACER data by commercial vendors. It is already being used for analysis and case outcome predictions and therefore it is prudent for all courts to study and understand this trend, as it is already happening.

4. **Cross-case, cross-party, and cross-court data linkage**. Depending on the

status of the case and parties, it is important to know whether it is allowable or not to be able to view and use case histories. One could also use case management systems to supplement criminal history records (as several states such as New Jersey already provide), as the courts could have the entire and complete sentencing record. These kinds of linkages are easier at the state level if the state court system has a unified CCMS; this function is more problematical in states with decentralized courts which use a variety of CCMS's.

We have always believed that better information equals better decisions. More Information may or may not be better information. But it does create the opportunity to test different approaches. It also provides an approach to deal with increasing amounts and complexity of data so that it can be turned into information.

Potential Benefits of Data Analysis and Decision Support

1. movie is the

   discussion among the American baseball talent scouts that a particular player would not be good because he has an "ugly girlfriend," as a sign that he lacks confidence. Brad Pitt rolls his eyes at that comment which is the supposed "expert opinion." And the rest of the movie (and in real life for the Oakland baseball team)illustrated that the expert hypothesis was incorrect, and that good analytical data resulted in record setting team performance.

2. **Fair and unbiased justice is the goal** of every justice system and the legal systemthat supports it. Therefore we must be on guard for bias and use the data that we have to avoid it.

3. **Risk reduction**. The courts are necessarily involved in many of society's most difficult decisions such as removing children from a home, confiscating money or property, imprisoning a defendant, or adjudicating a complex set of facts and issues. The risk of making the wrong decision is considerable. So the various systems of justice use process and information and evidence-based practices to reduce risk. But There is potentially so much information available now that it may not be humanly possible, without computer support, to have the time to thoroughly analyze the information. In the history of technology and the law, at some point the intentional non-use of technology is considered negligence.

4. **Cost reduction** (primarily through reduction in jail populations for detention and short-term sentences). Improved risk analysis has the potential to reduce the numbers of persons who are detained. This in turn reduces facility overcrowding that makes them safer for the inmates. And over time this can reduce the need to build or enlarge jail holding facilities. (Parole systems are always separate from court systems, but the same benefits could be achieved with prison populations.)

5. **Long term societal benefits**. Statistically valid application of equal sentencing/ outcomes can improve the image of the justice system in society as being a fair system. Unequal application of justice has been one spark to civil unrest in the recent past in the USA.

6. **Process improvement**. Finally, improvements in data collection and analysis can provide guidance for court and overall justice system operations. It can also focus efforts on specific decision-making steps that in turn reduce or expand work time for the participants.

Caveats

Before going further, we must emphasize that we are not discussing or advocating automatic machine-driven decision making. Algorithms (computer programs) currently make millions of buy and sell transactions per second in stock markets around the world without any human interaction. Unlike those systems, in this article we are exploring recasting the presentation of data from static two-dimensional paper based approaches to more dynamic and useful forms.

We also must warn that many of the systems discussed below are either in their infancy or are speculative based upon technology trends. Risk analysis and evaluation systems in particular are subject to a significant amount of concern if they have not been validated.

We have seen similar worries before with other new technologies. And what we have seen with other technologies is that practical concerns influence development of the system and make it better. Thus we are including them in our list below.

Further, an article in Harvard Business Review, January-February, 2016 edition titled"Algorithms Need Managers Too" (page 98) warns that "people treat algorithms and the machines that run them the same way they'd treat an employee, supervisor, or colleague. But algorithms behave very differently from humans, in two important ways." …
"Algorithms are extremely literal" and "Algorithms are black boxes." The article correctly observes that "(r)recognizing these two limitations … is the first step to managing them better."

In other words, along with our examples below, we expect judges to manage the use of these tools as a means to an end, and to continue to be the final decision maker.

With that said, we can now discuss the ideas and potential benefits of decision support systems for the courts in the remainder of this article.

Technology Drivers

One last general trend observation: Automated systems can do a lot more work in a few seconds than people could hope to accomplish in a year. The examples below use many different data presentation approaches, including graphical approaches and different data organization approaches.

In the legal business this is manifest in the development and use of e-Discovery software systems. And these systems can consume and use all manner of data (including paper documents that are OCR'd, and also pictures). They then apply rules-engines to organize and provide search and data presentation in a myriad of ways.

Eight Decision Support Tools

Eight court decision support tool projects are described in the following sections. We Believe that the ideas and concepts pioneered in these projects can be considered and planned for future integration into the CCMS environment.

1. **Risk Assessment**

With the leadership of former New Jersey Attorney General, Ms. Anne Milgram, the Arnold Foundation has supported development and testing of "the Public Safety Assessment (PSA), a pretrial risk-assessment tool that is designed to assist judges in making release/detention determinations."

The Conference of Chief Justices has supported the development of Evidence Based Pretrial Release. And the NCSC has a great deal of interest in this area and has created a Pretrial Justice Center for Courts microsite

. This is an excellent place to learn more and monitor developments in this area.

2. **Smart Sentencing and Resource Allocation**

Judge Michael Marcus pioneered resource availability and allocation such as for drug treatment and intensive probation programs in Portland, Oregon. Similar approaches have been used in the past by the pioneering Midtown Manhattan Community Courtinformation system.

3. **Timeliness of Information and Linkage between Matters**

This concept graphically displays the age of information provided, and then models and displays the information-sharing linkages. Is the information current or old? Are the linkages simply there or not?

A graphical representation of the age of data could be either by color coding the data (red text for example would be older than 1 year) or else as a color warning on the field or for the entire form. The color coding does not necessarily mean that the decision should be any different. Instead it is intended to prompt the users to verify it with the person or with other data sources for accuracy.

Data linkage can be best explained with a short story. Early one morning I met with a judge who was upset. She explained that she was not told that the person she ordered to pay back child support earlier in the month had stopped paying his other two obligations. She simply didn't know that there was an earlier order against the person, and the parties failed to produce this information. The critical information for her decision was both not presented and then too late, in this instance.

Therefore, a system that links persons to all cases including criminal, civil, domestic and potentially to juveniles who have cases in the courts would be very useful in avoiding such situations. But the system may also note when a link is not available. In that example perhaps a traditional personal query by court staff is needed in order to check the link.

4. **Identification Certainty**

This decision support capability would report whether the person before the judge has been 100% identified via Biometrics such as fingerprint, iris, or facial recognition. Many Times a person's identity is based only upon their personal testimony, unsupported by government verification. Or else, the person's identification documents are questionable.

We believe that the system should report the certainty or uncertainty of identification. This could be done via name status such as "fully verified," "name verified," "undocumented," or "unverified." Case/person linkage is another type of data that could

similarly benefit by rating or categorization. Of course these ratings categories could be color coded as well. And interestingly, from the times we live in (therefore not arguing whether this is a good thing or not), with the decrease in digital privacy, there is also the possibility of using social media/ digital persona as part of the identification process by prosecution and police, and reported

as such in the status. AFIS Nebraska State Patrol System

5. **Balance of Justice**

The “balance of justice” concept comes from a test system developed in Scotland. The System provided information to the judge regarding sentencing decisions in similar convictions across the jurisdiction. In other words, the concept is that in order for equal justice to be achieved, sentences should ideally be relatively consistent within the jurisdiction. But as we know, it is often true, a particular defendant’s sentence may be more or less severe just because they randomly drew a harsh or lenient judge or were adjudicated in a particular location.

The Scottish system provided the range of sentencing and the norms of punishment. It Also allowed judges to justify/document the reasons for deviation from the norm. A more complete description of this systems approach was written in the Journal of Artificial Intelligence and Law (v6: 203-230, 1998) – “The Application of Judicial Intelligence and Rules' to Systems Supporting Discretionary Judicial Decision-Making” by Professor Cyrus Tata.

6. **Law Resources**

This idea comes from several states that have electronic bench books. We believe that it is possible to embed these legal resources into the case management system. This would allow the CMS to automatically link between the case matter and the relevant sections of the law and bench book materials -- for example, to make checklists that have been developed by judges easily accessible.

An example of this is described in an article on North Carolina’s work in this area in the NCSC 2015 Trends in State Courts Report available here, “Building a Better Bench Book.”

7. **Family and Interpersonal Relationship Mapping**

Most of us working in courts understand the difficulty that judges have with complex family situations. And thus it is no surprise to hear that judges can become confused about a person’s role in the family structure, particularly when family relationships can quickly change due to the stress of being involved in a domestic dispute. This is where the concept of Genogram diagrams could potentially help. As shown below, the diagram links persons by connecting lines that denote emotional relationships.

The diagram is then used to graphically display a person’s interpersonal relationships with other as shown in the example below that was published in an American Probation and Parole report: “Implementing the Family Support Approach for Community Supervision” (starting at page 21) in 2008.

There have been successful tests of the Genogram graphical relationship mapping in family courts. One practical issue is which participant in the process is able to produce the

diagram; often the social worker who works for the state or county knows the family situation best but may not have the tools or motivation to produce a diagram. But with new software tools we believe it is increasingly possible to build these maps dynamically from the data resources available.

8. **Case Management System Embedded Decision Support**

Earlier in 2016 we published an article here in the Court Technology Bulletin: “Court Case Management Events and Decision Mapping.” In that article we noted that the case events (triggering mechanism) of CCMS could be expanded to include a decision table. And specific example of a decision table is eligibility in Georgia for reduction of motor vehicle insurance premiums:

Use of decision tables and other embedded decision support would allow the CCMS more flexibility and automation in actions taken such as task scheduling and document created after an event is captured. Specifically, it has the potential to simplify the number of tasks triggered from the case even since there would be a one-to-many output instead of a one-to-one (we often refer to this as the falling dominoes) approach.

9. **E-Bench.**

Finally, we need to pull everything together for the judge. Some decision support can be embedded directly into the CCMS functionality. But we also think that we are on the path to include a great deal of additional functionality in an “E-bench” type interface for the judge.

This is discussed in the COSCA/NACM Judicial Tools paper and other articles on judicial E-bench systems here and here.

Part 19: User Interface (UI) and More

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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 filling 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.

Part 20: Comments on Project Management, Acquisition, and Development

Page 1

A major question for courts is whether their CCMS/Electronic Document Management System/E-Filing system should be built or purchased? This simple question creates a cascade of others such as, what amount and kind of funding is available? Does the court have the technical capability to build the system? Does the court have the ability to manage such a project either as a developer or an implementor?

Next, concerns control? Is it important for court IT project managers is to be able to plan and have control over the future system capabilities? There will be changes over time. Is There a good project policy approach with the judges and court staff? Are there technical capabilities within the court? Can the court manage this, or would they benefit from help?

Scope? What is the environment where the system will be implemented? Is it are placement for an existing system? Is there a need to convert data or is it a new implementation from a paper-based court? And/or is the court in a state of change due to changing jurisdiction, demographics, and law?

These and many other questions are all classic project management issues. But many items are often not considered. For more see the Project Management Institute guide and standards "bookshelf" and consider engaging a Certified Project Manager?

Option 1: Solutions Based Procurement

I have found it is often best, and easier, to define the desired outcome for what the new system must or should do and, not necessarily "how" to do it. Focusing on the outcome allows everyone to think about the solution that benefits them individually and not undefined requirements.

Therefore, most of my Requests for Proposals (RFP and "Tenders" in international"admin-speak") in recent years use the Solutions/Outcome-Based Procurement approach. To help explain this concept, here is an example of the introduction of one of our RFP's:

“This is a Solutions Based Procurement which states a problem. Your solution should state your company’s answers the problem. Through this method, the Court has attempted to provide the minimum amount of detailed specifications and requirements in order not to transform this RFP into a Bid. As a result, the Court does not want to limit your creativeness or ingenuity by over-specifying the requirements of this solicitation. However, please note that in your response, following the “Checklist for Off errors” general format will assist the Court and the State in evaluating your submission.”

The key benefit of this approach is that it lets responders propose what their system and their company do best. A court/court system will normally only do only one or two CCMS of projects over the course of several decades of time. They simply do not have the experience to micro-specify and manage a project of this size and complexity of a CCMS. More importantly, the vendor’s solution allows the court to learn about, and hopefully adopt, new ideas that are the result of years of vendor court experience and systems development.

I often “joke” that we should not use the popular phrase in our field, “court re-engineering”. This is because in my experience, the court organization and processes were never “engineered” in the first place. To be fair with technology changes, an original design would not be the best solution today anyway. With this kind of solutions-based approach, there is now an opportunity to do collaborative “engineering” via the vendor’s experience with many courts.

Allowing the vendors to propose, train, and implement their system based upon their design and experience, also lowers costs. This is because configuration/functional changes can be minimized if the court allows. From the court’s point of view, the strategies to adapt old processes to the new system rather than the system to the old processes. In short, the court should change processes to take advantage of the new advanced system.
Ideally the court should have a two-phase approach to these changes because they initially don't understand how a new system will work in their operational situation. The first phase is then is the best guess at how it should be used. And then the second phase involves evaluation and making changes to both court processes and the CCMS. As a result, I recommend giving a court and vendor a two-year schedule to accomplish both phases.

Another great benefit of the solutions-based approach is that one can visit other courts to see firsthand how the new proposed system and processes are used. This allows a court to reject the conceit that they have thought of all the possible solutions and approaches? Again, they can learn from others including the selected system vendor. This approach can save a great deal of time and cost as the functionality has already been developed and implemented by other courts. In other words, one is adopting is a proven solution. A new system will very likely have additional data and capabilities such as built-in integrated document management that can accept and process the e-filed/scanned documents. The new document management capability could allow for digital signatures, workflow, “e-bench”, and provide the foundation for smart public access since the CMS will “know” what can and cannot be openly posted.

Project Organization and “Selling your Court”

Courts often think they are good customers. In my experience that is often not the case. First, the court may not know what they want their new system to do. You need to show the vendors that you “have your act together”. I explain below.

Unfortunately, many times, the automation system is purchased to solve internal disagreements and power struggles among participating leaders and departments. Budgets can be altered especially if the system affects different political entities included elected officeholders, and state, and local departments. It can be a dysfunctional family.

The best CCMS/technology vendors often have many courts they can choose to work with. I have seen vendors choose not to bid on a project because the court either does not explain their project management and organization or they have already failed and thus has a bad reputation. And a poor RFP that does not discuss the court’s project leadership and organization sends up a red flag that they are not serious about the project’s success. If the vendor has to “fix” the court’s dysfunctions then they will need to charge a premium to cover the time and effort and risk to do it.

Another warning for potential vendors an RFP that is confusing, too long, and/or too complex. This approach is often taken by a court because they may be trying to solve every problem that they have and/or use the project to overcome their dysfunctions. They Are essentially looking for a hero to rescue them. IT is hard enough without trying to perform miracles.

I think that a better approach is to first, find or hire an experienced solutions-oriented project manager (PM). You can think of this person as the court’s psychologist. They Work with the judges, managers, and court staff to understand their issues and define the goals to be accomplished. They also work with the county/state/national IT management institute their standards.

They can also discover and take advantage of existing software licensing contracts. Many times, I have saved a project hundreds of thousands of dollars because software licenses suchas those for database, office productivity, and servers were already paid for by government or grant programs.

Trust in the PM is key since there are going to be many, many decisions that will need to be made. The project manager can also be designated as the “single point of contact” for the research, RFP, negotiation, and working with the winning vendor. This single point of contact is key for a successful project because it keeps the lines of communication simple. Also, the PM can consolidate/filter information and save everyone time.

The second tip is to have/create a good court project organizational structure. We teach a three-tier organizational structure in our NCSC ICM class. The three-tiered committees: Policy, Business Process, and Technology. You can take our class to learn more. But I am sure many of you can figure this out.

The third step is documentation. Document everything; especially court processes(current and desired). After collecting the documentation then organize it. The vendors need to understand the court’s beginning organizational structure, staff size, duties, and roles. They need to know the

computer technology that is existing including network equipment, and any other technical help/expertise that might be available from the other parts of government. I like to include examples of all court forms/documents/templates along with management lists and statistical reports.

One also needs to provide information from any existing CCMS. This can be features that the court likes, reports, and especially data sharing/exchange connections and messages.

The fourth step is for the project manager and committees define the goals and results the court wishes to achieve by acquiring and implementing a new CMS. But please note, unless there is a problem with the funding availability schedule, I do not want to have the court's team define a hard implementation schedule in the RFP. A goal yes, but not the schedule. Again, the court does not know the vendor’s system and their recommended timetable that they have learned through experience.

Shopping for a CCMS and Other Tech

Many courts/governments have policies regarding contact between the courts and vendors. This restriction is primarily implemented as part of the formal acquisition process. However, prior to that restricted time after the RFP has been issued, I think that one should educate themselves with online materials and by visiting with the vendors at the various court and court technology conferences. I think it is also good to have materials sent by the vendor. And if not restricted by contact rules, see the systems in operation in other courts and view the training and support materials.

In other words, it is OK to shop. A smart consumer is preferred by technology vendors because it saves time. It allows for constructive conversation about the systems features and the reasons behind their design choices. It can provide an insight as to whether one wishes to work together in the future. This “shopping” can open your court to new possibilities

I have taken the opportunity when visiting other courts to ask for copies of the RFP documents that resulted in the system they selected. If it is a good system, I will borrow ideas from the RFP. If it is a bad system, I know what not to ask.

When budgeting for a project, I have found that it is generally easy to discover the price of the system as it is documented in government budget/approval meeting minutes. This in turn may change the scope and timeframe of an RFP in order to fit into our project's financial parameters.

Last, I try to avoid a Requests for Information (RFI) process. I have found that RFI’s can used as a filter qualify some unqualified vendors that do not have the ability to be successful. But they can be expensive to answer by the vendor and if made optional, there may not provide any useful information to the court or the vendor.

Option 2: Building a CCMS

The other option of course is to build a CCMS. I have become more of a proponent of this

approach in recent years, especially for developing nations. This is the long-term approach and so it can mean years of commitment to the effort by the judges, court staff, court management, and IT. A large court system, such as a state or national level have had success with this approach. Prominent examples are the US Federal Courts and the states of Connecticut, New York, New Jersey, Alabama, Mississippi, Missouri, Arkansas, Wisconsin, Iowa, Nebraska, Colorado, and Utah. Internationally I would point to Singapore, South Korea, and Brazil.

The first reason to build is to control costs. The web, cloud, and open-source and free software components have made it much quicker and less expensive to write software today. Second, the world now has formal technology training using open source software available in universities everywhere. The key is to use the software packages that is taught in your court project. While that approach might not be the “cool” tech, it can get the job done.