



National Conference of Bankruptcy Clerks

Future of Automation in the Bankruptcy Courts

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In the late fall of 2006, the NCBC formed a committee to define the architecture and requirements necessary for the development of the next generation Case Management/Electronic Filing System. The committee set out to identify the various functional areas (i.e. case management, chambers and order interface, claims, noticing, integration requirements with other customers/agencies etc.) and outline the architecture (OS, database, etc.) that would comprise an ideal system, on a national level, for the Bankruptcy Court and Clerk's office. The reasons for organizing this committee are two-fold: one is to develop a document from the users' perspectives that outline the most critical aspects needed to perform their duties. The second is to have a starting point to begin a discussion on the strategic direction for development and deployment of automated systems used in the Bankruptcy System.

While this document does not have the endorsement of every individual in the system, it has been assembled using a broad range of experienced and expert individuals from the Bankruptcy Community. The following are the members of the committee:

Andrea Redmon, Chair, Chief Deputy Clerk, OK-N
Dana McWay, Clerk, MO-E
Ken Hirz, Clerk, OH-N
Vito Genna, Chief Deputy Clerk, NY-S
Stacey Manley, Administrative Manager, DE
Jean Dalicandro, Operations Manger, IL-N
Russ Reynolds, Information Systems Manager, CA-S
Chris Tuttle, Systems Manager, KY-E
Rick Thompson, Manager of Information Systems, MD
Linda Spaight, Case Administrator, RI

There were many individuals who were "recruited" into this process because of their local expertise, but not mentioned here. I would personally like to thank these individuals for their input. As you read the document, I am sure that you will appreciate the time and effort expended to create the contents.

This document was originally distributed as a draft and further comments and input were encouraged. We received numerous suggestions from Judges and Clerk's office personnel and have incorporated those where appropriate. Thanks to all who contributed in this fashion. Utilizing this approach created a document that is comprehensive, relevant, and timely. It is our hope that it will be used to help determine the direction and attributes needed in the next generation system.

Kenneth S. Gardner
President, NCBC

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A Vision for a Next-Generation Case Information System

This document is an outgrowth of formal and informal discussions between Clerk's Office staff, including Clerks of Court, Chief Deputy Clerks, operations staff and systems managers. Several of the concepts addressed in this document were considered originally in the development of CM/ECF but were not adopted for various reasons, e.g., failure to resolve technical or policy concerns. The many experiences courts have witnessed in implementing, modifying, and maintaining CM/ECF through the years have taught many lessons. Included in these lessons are ways to surmount these technical and policy concerns. It is intended to provide the foundation to begin a discussion on the long-term strategic process, as outlined in the following paragraph. It is not intended to take anything away from the current application and process. On the contrary, it is meant to further improve upon a structure and system that has made great strides in providing outstanding service to our customers.

Finally, this document explains the concepts envisioned to support a next-generation application designed to allow the federal judiciary to strategically manage its case information systems life cycle. Such strategic planning requires that an effort begin now to research, design, and develop a next-generation application, understanding that such an undertaking entails a multi-year process. By taking this approach, this next-generation application will be ready to deploy when the current CM/ECF application completes its natural systems life cycle in the coming years. The document is organized into three substantive areas: central features, functionality requirements, and technical requirements. Details beyond those expressed in this document are purposely omitted, permitting a focus on the vision of a next-generation application in lieu of being mired in the details.

CENTRAL FEATURES

Bankruptcy Centric

A bankruptcy centric approach describes an application that is void of non-bankruptcy programming code, unless a particular bankruptcy court chooses to implement a module that is available in a district or appellate court application. This would provide a streamlined application that performs optimally because it doesn't have to execute extraneous code. This approach makes it easier for courts that must modify the system to allow for local needs. While being a bankruptcy centric application, the structure of the product would be compatible with the CM/ECF product used by other court types. Such an approach is analogous to the Microsoft Office suite, where files address different systems but are compatible with each other. This court specific

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application approach is familiar to the federal judiciary and the Administrative Office, as seen by the approach taken to develop and deploy the appellate CM/ECF product, which differs markedly from the bankruptcy and district court products but the architecture is still compatible with those products.

End-User Orientation

This approach focuses on reaching design and operational decisions from the perspective of the electronic filer (e-filer), thereby improving the filer's ability to successfully complete interactions with the court in an electronic environment. To achieve an end-user orientation, information should be gathered from a wide range of users, including attorneys, the Executive Office of the US Trustee, panel trustees, and petition software vendors, among others.

An end-user approach would include, but is not limited to:

- allowing for a multiple log-in process per filer;
- use of a consistent format throughout the application for the case number and other data elements;
- use of the enter key as a substitute for the submit button throughout the product;
- simplified navigation so that most documents could be filed by using one or two screens;
- a threaded docket (related documents strung together);
- bulk printing of documents in a case;
- streamlined process for notifications of electronic filing (*reference MR 446 07/09/2001*); and
- custom-user configurations and defaults to streamline the e-filer's operational processes.

Such configurations and defaults would involve use of "dummy-proofing" tools in the user interface, similar to the Advanced Field Attributes (AFA) found in ICMS, including sanity/error-checking performed as the data is being entered and if a nonsensical entry is made, the user should be warned and required to correct the entry. Similar features could be employed to allow courts at their discretion to enforce some of their local rules using the computer program. While not applicable for all fields (due to the nature of bankruptcy practice and local rules), many fields exist where this approach can be used. The vision of an end-user orientation allows the local court flexibility to present information through the application in any order that best suits local custom and practice and customer needs.

Modular Approach

The new version of the new Case Information System should be written in modules, so that code can be reused and future modifications are easier to address.

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With a modular approach, courts could decide to hide or disable certain functions or programs that they do not use. Likewise, when enhancements are made in future releases, they would only affect the module and could be better tested in isolation from the rest of the code. Local courts could then adopt the same methodology and provide easy to install add-ons to the new Case Information System (i.e. e-orders, v-cal, etc.). This approach would also provide a platform for a solution to allow attorneys to track all activity in all their federal cases by providing the ability for them to run a single docket activity report. Properly designed RSS feeds specific to each attorney or case might accomplish the same thing. Additionally, this functionality has the potential to alleviate the aberrant, unforeseen occurrences/failures with NEFs (*reference MR 1451 04/01/2005*).

FUNCTIONALITY REQUIREMENTS

Case Management

A "Case Management" system, with proper calendar management integration, should be the foundation on which a new or revised system is built. This is the core functionality of the Court and Clerk's office. This would require an approach that allows the system to help manage the cases, via the specific areas outlined in this section. At its core, it would be event and timeline driven, and would not allow certain events to be "double loaded" in the system. An example would be the ability to file two new petitions in a case. This cannot happen after the initial filing, and better yet would prompt the filer to only file an "amended" petition. There are numerous instances where this occurs throughout the life of a bankruptcy case, and it would ensure that the other areas are as accurate and efficient as possible (especially the linkage with calendar programs), without having to manually review and quality control every step of the case. This will also allow the system to integrate technology with many types of Electronic Data Interchange, such as smart forms.

Docketing/Access

Bankruptcy Rule 5003(a) provides, "The Clerk shall keep a docket in each case under the Code and shall enter thereon each judgment, order, and activity in that case..." In order for the Clerk to fulfill this requirement, a docketing mechanism that minimizes errors by external filers and the resultant corrective entries and also maintains the integrity of the mandated statistical tallying is essential. To that end, there would be a way that allows the court to control which screens appear, and in which order each docket event is displayed, thereby allowing the court to fully control and direct users to minimize filing errors.

To help ensure accuracy, a link to the pdf should be added to the final submission screen to allow the filer to ensure the proper submission of any document

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before pressing the final submit button (*reference MR 172 11/24/1997*).

In addition, there would be functionality built into the system to limit access to either new attorneys, or attorneys that are struggling with filings (the Novice/Expert Interface Option), so that the court may require those attorneys to upload a document, but allow the court to insert that onto the docket after performing the appropriate quality control. This functionality should allow the court to limit, by login name or at the event level what documents may be filed directly into the system.

Reports

An item that would be very useful in the new Case Information System would be a standard reporting tool that is supported by the AO and by SDDS. This would provide an opportunity for Courts to write specialized reports to retrieve data that is needed.

Another beneficial report viewing capability would be to have relationships in the system work both ways and display on the docket that way. Currently, CM/ECF has a Related Transactions report, but it would be nice to see right on the docket what documents are related. That could be shown in a column, and the user would have the ability to turn this functionality on or off (*reference MR 1451 04/01/2005*).

Filing Dates/ Fee Payments

A party filer would receive the legal benefit associated with filing a pleading **only if** the filing fee has been paid or other legally acceptable payment arrangements have been made (i.e., application to proceed *in forma pauperis* or pay in installments). Such an approach would involve parties submitting a pleading to the court electronically with the filing fee, an installment application, an ifp application, or a request for deferral or waiver, where appropriate. Absence of either the fee or an appropriate application would result in either the pleading not being filed or the pleading being “received” but not “filed”, depending on how the Court configured this module. Option #1 would function similar to the “shopping cart” and “check out” processes used by many Internet sites. This would provide the ability to submit multiple documents in a single session, but in order to complete the session, payment must be made. If payment is not made, the documents are not filed. Option #2 would result in the pleadings being “received”, but not “filed”. These pleadings would not be placed on the public record or be viewable through PACER. The “file” date of the pleading would become effective upon satisfactory payment of the fee or submission of the installment or ifp application, and through automated means, the pleading would be placed on the public record and be viewable through PACER (*reference MR 737 08/20/2002, MR 1080 08/01/2003*).

This approach offers many advantages. First, both options require the filer to meet the obligation of paying the designated fee in order to complete the filing. Option #1 follows the business protocol for online filing and eliminates any follow-up by the

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Court. Option #2 also requires the payment of the designated fee to complete the filing, but saves the documents from the initial submission. Instead of the court bearing the risk to collect the fee and the filer receiving the legal benefits of a “filing” without paying the fee, the filer would bear the risk of not having the legal benefits afforded to a document until compliance with payment arrangements. Second, option #2 mimics the approach previously used by courts for paper pleadings before the advent of CM/ECF, and it is not unfamiliar to external and internal users of the courts. Third, e-filers could still have the option of one pay transaction for numerous pleadings, though option #1 requires payment at the end of each session. Fourth, for option #2, such an arrangement could work with algorithms for judge and trustee assignments, thereby addressing the question of judge or trustee shopping (*reference MR 859 02/12/2003, MR 1328 05/20/2004, MR 1716 08/25/2006*).

Financial Management

Envision an integrated financial management system that includes important financial functions, including but not limited to, the capability for a cash receipts journal and registry ledgers, and a new approach to the trustee voucher payment process. Such an integrated approach would save court staff from the upload/download of receipt information and eliminate the need for court submission of quarterly reports to the Administrative Office.

Calendar

Envision an integrated calendar program composed of two elements: (1) a central framework that applies to all courts; and (2) customizable components. This approach provides a wide array of components from which courts could choose, allowing local needs to be more easily met. Some components may be mutually exclusive, for example, one component may allow e-filers to schedule matters on a docket, a separate component would only allow court users to so schedule, and a third component would allow both e-filers and court users to so schedule. To accomplish this would require a collaborative effort of all bankruptcy courts to identify both the framework and components. Further, the Judiciary would need to recognize that building a design with mutually exclusive components is an acceptable approach to addressing courts needs as opposed to finding a single solution that may not adequately address any court’s needs (*reference MR 658 03/08/2002, MR 1415 12/28/2004, MR 1698 08/14/2006*).

Digital Recording Information

A link should exist within the docket report to the digital recording made during hearings. Access to the recording should be based on group security so each court can choose to restrict or allow access to certain users. Like the silver ball that links to a notice of electronic filing receipt, it would be helpful to have an icon appear next to the docket entry for a hearing held event. When the user clicked that link it would

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automatically open the program that the court uses for recording hearings and take them directly to the place in the audio file for that hearing. Although most courts use FTR, the program should use open standards so that connectivity between the new Case Information System and any digital recording software can be seamless (*reference MR 1195 12/18/2003*).

Court Access

During court, Judges may need access to many items in the case, those could include: the docket sheet, Westlaw, minutes, notes, claims registers, digital recordings and any ancillary items that may assist a Judge in deciding a case. A separate interface should be created to allow Judges to navigate easier through the system, with less “clicks” needed. A good example of what is needed can be found in the CaseDocs program, written by Georgia Northern Bankruptcy Court.

Recusal System

The Conflict Checking functionality in CM/ECF needs major improvement. The new Case Information System would only look at and report on a specific string of information. There would be a way to comment out conflicts that have displayed, but have been resolved so that information would not continually appear on the report. Additionally, there would be a way that a Judge can run an ad hoc report on cases that were not assigned to him, but cases that he will be hearing to determine if any conflicts are present.

Data Dictionary

Editing the data dictionary should be simplified so operations staff can make modifications easily. Currently, basic programming skills are required to make changes to the events. This would enable the operations staff of the Clerk's Office to work independently of the IT department for normal modifications to the dictionary. One solution to this issue would be creating a graphical interface where the end user can choose functionality without writing code (*reference MR 1841 12/29/2006*).

TECHNICAL REQUIREMENTS

Database Model

The new Case Information System should be created with a true relational database management system (RDBMS) back-end which works in concert with an object database management system (ODBMS) to store and supply complex case-related data, such as PDF documents, and other types of binary data, such as case-related multimedia. In the past, the Judiciary has designed databases and systems from the ground up. For the new system, all commercially available, off the shelf, customizable document management applications should be examined first before

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undertaking the development of a new system.

The current CM/ECF database system (Informix Dynamic Server or IDS) can be categorized as an RDBMS, however, the current CM/ECF database was not designed to fully utilize the relational capabilities built into the software. In a true relational database structure, all data is connected and interlinked through table level relationships and data addition or modification cascades through the underlying table structures remaining transparent to the user. Utilizing a true relational model in the new system would likely allow less complex and more efficient processing at the user/transaction level. For instance, the creation of a new case filing in the current system requires several separate pieces of code and multiple connections to the database in order to store all of the relevant case and person data. In a true relational system, the same action could be completed in a single, more compact, section of code with possibly only one connection to the database.

Incorporating an ODBMS in the new system would allow for more efficient storage and retrieval of complex data - especially binary data types. Data in an ODBMS is stored and referenced as a complete "object" rather than distributed bits of information. For instance, a case "object" could include all of the documents associated with that case. Because the data is grouped as an object, the time to retrieve and display that data is minimized, providing a more timely response to the end user. One caveat to introducing additional, varied data types to the system would be the need for a new storage methodology, one that could accommodate data such as digital video and audio. An ODBMS would be a viable solution to address that need.

Technical expertise at the local court level is needed to incorporate an ODBMS into the new Case Information System. An ODBMS requires the ability to program in an object-oriented language such as Java or C++. While degrees of expertise currently vary within the court family, these languages have become fairly ubiquitous in higher education and many new hires in local IT departments are equipped with this expertise. Existing staff who bring expertise in languages required for an RDBMS can benefit from additional training obtained at a local level or at the national level, as patterned after the current practice of PERL training offered through SDSD. Further, staff in court units possessing expertise in a specific programming language could serve as a resource for other courts without requiring those other courts to hire more programming staff.

System Development

Develop and nurture a true partnership between the court family and the Administrative Office (including SDSD and the testing branch). Such a partnership would involve a steering committee/working group composed of court staff who act as decision makers, as opposed to advisors, and use of court staff as analysts and programmers working side-by-side (via remote means) with AO staff. This partnership

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would extend program management to the court level. A court would be responsible for a portion of CM from start to finish.

As the new Case Information System matures, courts should be heavily involved as decision makers, not merely advisors, in prioritizing what enhancements are made. Such involvement would result in maximum usage of enhancements by the court community, solving a problem in the current CM/ECF system where some enhancements pose promise to assist courts but as designed, have limited functionality and are rarely used by courts, e.g., Release 3.0 Quality Control Editor and Court Calendar Docketing Interface (CCDI).

System development would require establishing a process to adopt and integrate court-developed applications into the national case information system. This process would identify applications of national value pursuant to guidance found in an up-to-date IRM Bulletin and define how rapidly these applications can be incorporated into a national release. Such a process should result in eliminating much of the redundancy and wasted effort found in the present CM/ECF development process.

Deployment of New Releases

Each release would contain only those files that are changed as part of the release, thereby reducing the chance of overwriting locally developed modifications to code that would not be changed due to the release's content. All releases would be accompanied by a list of file changes and clear documentation. Also, documentation on how each script works within the system is required.

In addition, after each release, resources should be devoted exclusively to fixing any bugs that were created from the release. Within two months after each release, an emergency patch should go out to correct these bugs. Bugs, not modification requests generated by each release should not be carried over to the next release.

There has been a concerted effort made by the AO to provide Releases to the Courts 6 to 8 weeks in advance of any major release, and this is very much appreciated. Many times, there is also some flexibility built into when a Release can be installed, thereby allowing the Court to set their own schedule on getting on a new version of CM/ECF. If there is a deadline associated with any Release, depending on the work involved in that Release, Courts should receive that package AT LEAST 8 weeks in advance of the deadline date. Many times there are scheduling issues and other items that Courts need to work around, and the sooner a Release can be sent to the Court, the better we can plan for the installation.

Testing

Testing would take two forms: (1) centralized testing in Phoenix; and (2) decentralized testing by local courts. The centralized testing would follow the current

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model where court staff test through the Phoenix testing center, in person and/or remotely, using the test servers in Phoenix. The decentralized testing would allow a local court to test the new release using local data and its local dictionary, and local code but following a pre-established test plan. Under both centralized and decentralized testing, local courts would follow a predetermined test plan.

Courts with available resources would participate in centralized and/or decentralized testing on a voluntary basis. Before official release, volunteer courts would be provided with copies of files and documentation of the program modifications for the release as a means to identify whether any problems they experience in testing are related to modifications from the release. Defects identified in both centralized and decentralized testing would be reported back to a steering committee/working group for resolution. After resolution of identified defects, official release would occur. Resolutions of the defects would include a coding fix or modification request (MR) for a future release.

Modification Request Process

Modification requests (MRs) should address multiple categories (e.g., enhancements, fixes, easy fixes). The MR process should have a mechanism to prevent MRs from languishing in the MR database for an extended period of time. A clearly identified threshold number should be established so that if the total number of MRs submitted reaches the threshold, both the AO and courts would agree that an unacceptable situation has occurred, warranting immediate solution. EMRs should have a well-defined meaning and scope of application. The modification request process should provide a mechanism for courts to easily indicate whether or not an MR impacts their court, beyond the level of co-sponsorship of an MR. This would permit the AO to better determine how severe a problem is, or how beneficial a proposed improvement might be.

Data Integration

Through careful evaluation and monitoring, better data interfaces with outside users must be developed. Concept of data-enabled forms that benefit both the Judiciary and external users should be explored. Safeguards would be required to provide protection of the court's data while permitting users the access they require. The Process of entering data into the new Case Information System should be streamlined and made easier. The architecture should allow for streams of data electronically (most likely from external users), whenever possible, rather than a person entering data through web pages. Also, claims and noticing processes should be made easier and electronically, whenever possible, and yet keep cost contained. Explore the possibility of allowing claims and other documents to be filed via the telephone, perhaps an interactive voice system can be implemented to achieve this goal.

Hardware

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Each court unit is supplied with its own server to comply with a Clerk's responsibility to maintain and manage the legal record of the court. Servers need to be sized with room for growth and scalable (e.g., disk space, processors, memory) and operating system licensing agreements that are not memory limited. By developing a three-tiered system configuration methodology some savings may be gained while also avoiding the past situation whereby many large courts' systems have been crippled by unanticipated filing volume. By allowing for small, medium, and large system configurations we believe all courts would achieve a better match to their case volume but still allow for expansion if it is needed. Employing the RAM drive concept would allow a system with multiple processors to run multiple jobs simultaneously. Small tables (e.g., site, code, dictionary) would be stored in a RAM drive, thereby freeing up the hard disk drive for dedicated data access.

Software

Eliminate the use of proprietary software. All development should use open source languages that are prevalent in the marketplace. This provides the Courts with the needed flexibility in configuring CM to the individual needs. By using more popular and current programming tools, local courts will more readily be able to find local programming talent to assist them. We also need to ensure that robust debugging and performance monitoring tools are available to all database administrators. We also need to make version control software readily available for local courts programmers. Whatever mix of software is used, training (including CBTs) must be provided on a recurring basis.

Eliminate the use of HSGS or any similar tool from development methods. HSGS is a tool created at the Administrative Office for the purpose of providing consistency and standardization throughout the ECF software. There is little documentation and no training available. This makes it difficult to make required local modifications. Instead of using an application like HSGS to ensure consistency, programming standards should be documented and universal standards published. If complexity of the code is minimized, a universally accepted programming language is used, and training is made readily available the court community would be better positioned to create code that can be easily modified and supported.

Security

All data mining should only occur under the auspices of PACER or a PACER-like system in the event PACER is replaced. An automated way to protect against data miners must be included with the product used in court operations. The system should be configurable to prevent data mining during business hours (*reference MR 1955 07/10/2007*).

The system should provide a more granular approach towards security for sensitive CM/ECF tasks. Currently CM/ECF allows only for privileges to be set at the

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program level. However, some programs provide the ability to perform a large variety of tasks. The privileges on these tasks, internal to a single program, are currently "all or nothing." More control over these tasks will allow for better internal security. For example, in the docket event editor, a user that is granted privileges to the docket entry editor has far reaching ability to change everything about the docket event including:

- The ability to edit or delete all docket entry text
- The ability to add, edit, or delete any documents attached to that docket event
- The ability to edit professional fee amounts.

A court may prefer to allow only specific individuals in its court to have such far ranging privileges and then to provide some case administrators the ability to change only the actual docket entry text.

In addition to a more granular approach towards providing access to certain areas of ECF, a robust audit trail should be available. Access to the audit trail should be controllable based upon the Clerk's directive and should contain information showing what each user has done within the ECF system. The information should be easy to interpret by non-technical people.

Replication

More than a 1 to 1 proposition: Develop improvement over the current environment that would allow for easier navigation with fewer steps (reducing risk of failure in the event of an emergency). Courts want the flexibility to maintain their own backup systems in addition to the replication center in order to give ample coverage in the event of an emergency. It is impossible to anticipate how an emergency will unfold and it is feasible the replication center will not provide the best alternative depending upon what the actual emergency is. The replication architecture should allow for a seamless switch over of complete applications at any time. It should monitor itself as to errors, switch over on its own and provide error reports. Primary and secondary (back-up) systems should always be ready to be the primary [main] system. It should be seamless to a court as to which system, primary or secondary, is being used at any given time, and allowing the courts to operate on either system long term.

Conclusion

While the current application has allowed for savings because of converting paper processes to electronic ones, bankruptcy operations can reap further benefits and efficiencies in numerous ways with the development of a system as outlined herein. Since many of our processes are more administrative in nature the benefits of taking advantage of automated processes have significant return on the investment, and will allow the bankruptcy system to continue to be a leader in the use and application of new technologies, while also delivering better service to our judges, stakeholders and customers.